Malaysian Preschool Children with Attention Deficit Hyperactivity Disorder (ADHD) in Inclusive Settings

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by

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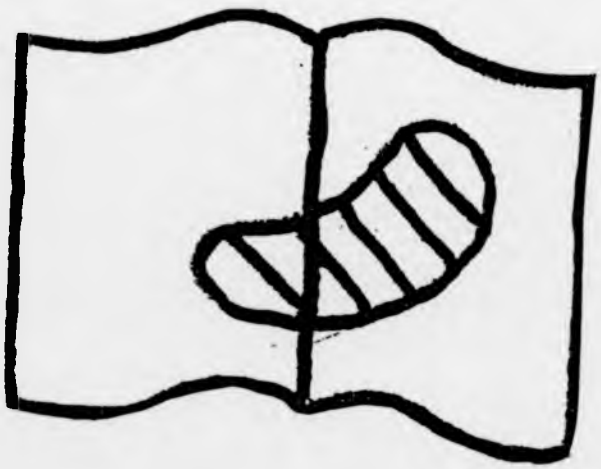

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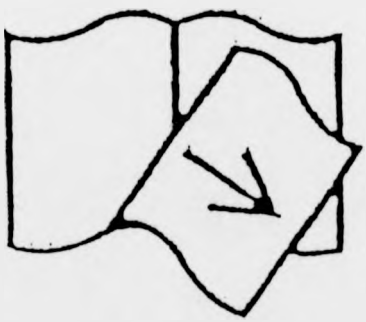

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SEMALAM HARI INI DAN ESOK
(YESTERDAY TODAY AND TOMORROW)

For those under the ADHD umbrella in Malaysia

Semalam di benua lain nama itu diberi atas salasilah kelmarin yang selari
Setelah lama gaya serupa diselidiki hasil kegelisahan ibu dan warga serikandi
Hari ini aku disini, mencari erti nama itu dalam penataan sendiri
Terjemahan 'kasih sekitar' yang berbaur curiga dalam kemelut realiti aku temui

Esok aku akan kembali bilamana pencarian ini menjejaki destinasi
Membina mercutanda sebuah harapan atas tapak pencarian ini
Untuk anak Malaysia selangkah lagi membina imej atas keyakinan dan usaha sendiri
Kerana kecermerlangan sentiasa ada menanti walaupun di dahan yang tinggi dan berduri

Semalam, hari ini, dan esok akan silih berganti dan nama ADHD mungkin bertukar lagi
Yang pasti, ciri itu yang terpaku dalam diri tidak akan pergi sendiri
Namun pendidik tulin prihatin pada 'kelainan dan keunikan' dalam menabur bakti
Membina dedikasi waja, merubah persepsi dan jati diri yang kerdil untuk terus mendaki

(Supiah Saad: 22 May 2003)

I dedicate this poem to Mr Khairul Faizi and Mr Mistar Sulaiman, the special teachers in my life, who gave me hope and support during and after the short period I dropped out from school (late 1960s). With memories of their positive encouragement, I climbed the academic ladder to success.

Declaration

I certify that this is my own work and it has not been submitted for a degree at another university.

Abstract

Malaysian preschool pupils with atypical behavioural problems which have impact on their learning and social interaction are scattered in mainstream schools. Some of them may have Attention Deficit Hyperactivity Disorder (ADHD). The overall aim of this study was to explore ADHD empirically in Malaysian preschool children from an educational perspective in terms of whether the symptoms exhibited are demographically similar to those found in children in other countries as well as the impact of the symptoms in relation to classroom events in inclusive settings.

In examining the complex issue of ADHD a mixed methods approach was adopted. A teacher completed rating scale, ADHD Checklist (ADHDC), was developed and its psychometric properties were evaluated. The ADHDC was used to screen 533 preschool pupils in 28 mainstream classrooms from whom a sample of 10 pupils were identified as potential individual case studies. Structured and unstructured observations as well as interviews with relevant preschool teachers and targeted pupils were also used in data collection processes.

It was found that the stability of ADHDC items was high. Factor analyses indicated that the ADHDC factor structures were stable for boys, girls or both groups. Statistically, the ADHDC has sound psychometric properties. Comparing the ADHDC scores of particular pupils with ADHD and their comparison peers with the observation data supported the validity of the ADHDC rating. The observation study also confirmed that there were significant differences between the behaviours exhibited by pupils with ADHD compared to typically developing comparison peers. These pupils with ADHD were not popular in class and they were more likely to be neglected or rejected during classroom activity or interaction owing to their behaviours. There was also a variation in symptoms exhibited and the way teachers dealt with the symptoms. A significant number of the symptoms in the majority of cases were more likely to be exhibited during academic lessons compared to least academic lessons. In examining the way teachers dealt with ADHD symptoms, several constraints faced by teachers were uncovered including lack of knowledge and skills although they were positive towards pupils with ADHD in their class. They predominantly used traditional methods in teaching and hence less pupils' involvement in activity. The teachers were positive about pupils with ADHD in their class and perceived that these children progressively improved in their classroom behaviours.

This study concludes by recommending that the ADHDC may be useful for screening preschool pupils with ADHD symptoms and the data could be beneficial for planning educational provisions for those pupils. This study also suggests that inclusive education for preschool pupils with ADHD is a workable provision provided more appropriate training for teachers and further research including action research is carried out for better understanding of the situation and appropriate provision for pupils with ADHD in inclusive settings.

Chapter 1

INTRODUCTION TO THE STUDY

My first experience with special educational needs (SEN) children started in 1987 when a group of three visually impaired secondary students were placed in the mainstream class where I taught Mathematics and General Science subjects. "May Lin" was one of them who I hardly forget since she inspired my curiosity to discover more about SEN as she also had other problems that exasperated peers as well as teachers in the class. My commitment with SEN developed progressively after I qualified as a trained specialist teacher for visually impaired children in 1989 and later, involved in other kinds of SEN. Doing the research on Attention Deficit Hyperactivity Disorder (ADHD) is directly related to my national and personal concern about SEN in Malaysia. From the commitment and experience collected during my service with the Ministry of Education (MOE) Malaysia, I was concerned about the providence of mainstream pupils with SEN characteristics who were not diagnosed for any SEN category, as they are physically perfectly normal; in particular the pupils with ADHD-like symptomatic behaviours.

In Malaysian educational circles, children with learning difficulties who are studying in primary schools are either provided with remedial education or a special programme (for those who are unable to cope with mainstream demands and require modified access to national curriculum). Children with remedial needs were not included in the ministry's special education programmes because they were assumed not to need a very specialised educational provision (compared to children with sensory or intellectual impairments). Hence, the determination to study the link between pupils with ADHD and the actual classroom practice in preschool programmes was developed.

1.1 RATIONALE OF THE STUDY

ADHD is one of the new categories of children with SEN, grouped in Learning Disabilities (LD) in the Malaysian educational classification. Children with behaviour

problems who were diagnosed as having severe hyperactivity or behaviour problems were either studying in special schools or in integrated special programmes in regular schools. However undiagnosed children with learning and behaviour problems remained in mainstream classrooms/schools, and performed poorly in classroom activities or academic achievement. In year 2002, the MOE identified 24,000 students in 'form one' (13 years old in first year of lower secondary) who had not acquired basic literacy and numeracy skills (EPRD, 2002) and the MOE was urgently requested to overcome the situation by introducing a special remedial education programme in every lower secondary school (Berita Harian, October 04 2002).

As mentioned earlier, ADHD is new in Malaysia. The newness of the subject area has important implications for empirical research to be done. This study is specifically an investigation of issues related to ADHD in Malaysia with particular focus on classroom events with respect to environments and educational provision for young children who failed to suit mainstream classroom demands. Prompted by the implementation of inclusive education (IE) in Malaysia, this study had three main emphases that shaped the investigation.

I wanted to investigate issues related to pupils with ADHD in mainstream classrooms. In identifying these pupils to be participants for the study, I needed a suitable and appropriate tool. Hence I started my study with the intention to produce a screening instrument for mainstream pupils with ADHD because there is a lack of screening instruments in Malaysia. The ADHD Checklist (ADHDC) was developed and tested for its suitability to be used for Malaysian children. An appropriate preliminary study was carried out of pilot testing the ADHDC with respect to practicality and reliability of the items in the ADHDC in similar settings to those of the proposed main study.

From the data of the ADHDC ratings, the cases of pupils with ADHD-like behaviours were scrutinised and samples were chosen for case studies. The term 'ADHD' is used to differentiate the pupils with significant symptoms of ADHD characteristics from their normal peers or those with non-significant symptoms. This is an operational definition on the basis of the ADHDC. The validity of this designation will be

discussed on the basis of the empirical study. These pupils are henceforth called 'pupil/pupils with ADHD'.

The second aim was to identify the significant educational and environment factors that might be associated with the learning processes of the pupils with ADHD. From this perspective, the researcher was looking at teaching procedures including why and how some teachers differ from others in providing classroom environments or teaching preparation for pupils with ADHD in their class. Aspects related to teachers' perceptions and knowledge were included in the investigation in order to study the overall pictures of the cases.

The third aim was to investigate pupils' perceptions on the situation of ADHD symptoms, which included the classroom climate. The study focused on the aspects of classroom physical environment and social interactions. The opinions of the pupils with ADHD and their peers were gathered through the use of interviews and observations.

The terms 'preschool, SEN, ADHD, and IE' in this study refer to practical definitions of the phrases used by the MOE in Malaysian contexts.

1) *Preschool pupils*: pupils at pre-primary level, with the age of 5 or 6 years old undergo a non-formal schooling in public schools or private schools.

2) *Pupils with SEN*: children categorised as having hearing impairment, visual impairment, intellectual impairment (educationally referred as children with learning difficulties (LD) by the MOE), and children with mild autism. Children with LD are perceived as having severe difficulty in acquiring basic skills in literacy and numeracy as well as behaviourally not being able to function normally within the mainstream classroom. Children with Down Syndrome, ADHD, and specific learning difficulties such as dyslexia are also classified in the LD group.

3) *ADHD*: a new term of SEN area, Malaysia adopted the international concept of the disorder (details in chapter three).

4) *IE*: inclusive education, that is educational innovation where children with SEN in the ministry's special education programmes are placed in mainstream classes so they can be educated alongside their more able peers. For the purpose of this study, the term IE also refers to the mainstream educational provision for undiagnosed preschool children with learning problems. This is due to the current lack of MOE preschool provision for children with SEN (except for 29 programmes located in special schools throughout the country).

1.2 SIGNIFICANCE OF THE STUDY

There is lack of empirical study on ADHD as well as of preschool education in Malaysia. Being the first of its kind conducted in the country, the findings will form the foundation for more local research in future. The study provides the evidence for future development in policy making and educational practice in Malaysia. The findings will add cross-cultural research and literature in an evidential study on ADHD. This study also forms a platform for mainstream teachers to balance the existing situations in Malaysian classrooms as the findings provide empirical evidence from a non-western country (most existing researches are from western nations with different culture and values). More importantly, the classroom practice among the mainstream teachers could potentially be improved through the recommendations for changes to teachers' education and in-service course. The results of a recent study by the lecturers of a local university show that the teachers trained by the MOE at diploma level do not have adequate skills and knowledge in managing classroom behaviour problems of pupils with SEN (Utusan Malaysia, October 15 2002).

Particularly this study is important as;

- There is no empirical study on ADHD in Malaysia. Jabatan Pendidikan Khas (JPK) or the Special Education Department and the MOE may use it as grounds for searching and preparing appropriate educational provision for pupils with ADHD

- There are concerns among Malaysian educators about the increasing number of mainstream children with learning and behaviour problems. Many

academics (universities and the MOE officers) and the members of the general public, have expressed concern pertaining to the effect of inclusive settings for both mainstream pupils and pupils with ADHD.

- Social reality of pupils with ADHD needs to be found first-hand by constructing, describing and analysing the relationship between the pupils and their environments. A better understanding of pupils with ADHD could be used in teachers' efforts to inculcate empathy towards children with SEN and ADHD.

1.3 OUTLINE OF THE REPORT

This thesis consists of ten chapters arranged such that the early chapters inform the readers about the background and theories used followed by the actual study and its implications. The study used a mixed methods approach to investigate preschool pupils with ADHD in the programmes run by the government schools.

The sample was drawn in two phases, the first phase involved 533 preschool pupils and 28 preschool teachers. The teachers were requested to rate their pupils' behaviours using the ADHDC. Those pupils were partly from urban schools and selected from all the 20 programmes in Kuala Lumpur (KL). The others were from rural school settings selected at random from 132 programmes in Kedah. In the second phase of the research, participants comprised of eight preschool teachers, ten pupils with ADHD, ten selected comparison peers and other peers, assistant teachers, a headteacher of one of the schools, and two parents. The ten pupils with ADHD were identified from the data collected in the procedure of ADHDC rating. The results reported in chapter 8 thus reflect the observations and interviews that occurred in 8 classrooms in specific locations namely urban (KL) and rural (Kedah). Two types of observations were carried out for different kinds of data during the field work; structured and unstructured observations.

As this study aimed to answer questions related to pupils with ADHD in inclusive education settings of the MOE preschool classrooms the investigation was carried out with 3 main domains of information:

- *Preschool teachers*: perspective, knowledge, educational strategies in dealing with pupils' classroom behaviours
- *Pupils with ADHD*: adaptation to social cues and classroom environments in their learning process
- *Environments*: physical and social environments that shaped the pupils' appearance

In addition related information was gathered from other adults who were directly or indirectly involved with the concerned participants (selected pupils with ADHD).

ADHD is conceptually new for most Malaysian and there is a lack of research in the Malaysian context. Consequently the present research on ADHD needed to be based on the historical, social and legislative background as well as practices in other countries or international settings.

Chapters 2 and 3 discuss the themes related to relevant literature of preschool education and ADHD. How current practice and legislation in Malaysian contexts may result in the challenges and constraints in classroom practice are discussed in Chapter 2. The features of the Malaysian education system and the historical and cultural influences on classroom practice are outlined for a better understanding of the context of the present study. Chapter 3 reviews the literature of ADHD from an international perspective of important concepts and researches related to ADHD. The primary definition of ADHD is briefly discussed and the term used for this study refers to the definition by the American Psychiatric Association (APA) in the Diagnostic and Statistical Manual of Mental Disorder 4th edition (DSM-IV), 1994. As most pupils with ADHD, specifically the hyperactivity-impulsivity and combined subtypes are 'action-oriented' in style, it is hypothesised that to a certain extent they have difficulty in coping with 'detail-oriented' Malaysian classroom practices and settings. This chapter provides readers with information on the disorder, and the related international issues that have implications for the present research.

Chapters 4, 5 and 6 inform the reader about methodological aspects of the research. Research strategies and the review of methodology are presented in Chapter 4. Chapter 5 presents the research design and pilot studies. Chapter 6 presents the practical aspects of the fieldwork and the decision to use a mixed methods paradigm. The targeted information to be gathered directly from schools is described. This would allow the researcher to collect enough data by spending a substantial amount of time observing pupils with ADHD and their classroom environments, and at the same time to interviewing other informants related to them such as their class teacher and peers.

Chapters 7 and 8 present the results of the data analysis. Statistical analysis of data collected using the ADHDC and structured observations are presented in Chapter 7. Detailed descriptions of the ADHDC findings are presented based on descriptive analysis and factor analysis of the data. Section two in the chapter describes the comparative analysis of targeted behaviours within the case and between the cases. Chapter 8 deals with the analysis of data derived from observation and interview sessions. The discussion is based on the themes and patterns that occur from the interviews and observations.

Chapter 9 discusses the findings and the recommendation to the MOE on the changes to be made for sufficient provision in order to give an equal chance for pupils with ADHD to succeed in school. Chapter 10 suggests the study's limitations, conclusions and recommendations for future studies related to ADHD in Malaysia.

Chapter 2

MALAYSIA: HISTORY, CULTURE, AND FACTORS RELATED TO SPECIAL EDUCATIONAL NEEDS

In order to make a balanced analysis and interpretation of pupils with ADHD in the present study, it is important to understand the context in which it was conducted. The educational, cultural and political setting where the programmes operate is related to the circumstances of pupils with ADHD in Malaysian preschool classrooms. Therefore this chapter provides a general background to issues concerning this study so the reader may have a clearer picture.

2.1 MALAYSIA IN BRIEF

Malaysia is a multicultural and multi-ethnic country with an estimated population of 23 million living in an area of 329 758 square kilometres. About half of the population are Bumiputra (including Malays in peninsular Malaysia and indigenous people of Sabah and Sarawak) and the other two major ethnicities are Chinese and Indian. The capital city of Malaysia is Kuala Lumpur (KL) located in KL Federal Territory. Malaysia is divided into 13 states and two federal territories, Kuala Lumpur and Labuan (these states are equivalent to counties in the United Kingdom). Twelve are in Peninsular Malaysia (also known as West Malaysia) and the other three (East Malaysia) are on the island of Borneo. West and East Malaysia are separated by the South China Sea. Each state has its own capital. The study samples were drawn from two states, KL and Kedah, both in Peninsular Malaysia.

Malaysia became independent in 1957 after having been colonised by the British from 1824 and invaded by the Japanese for a short period during World War Two, from 1941 to 1945. Prior to 1963, she was formerly known as 'Tanah Melayu' (Peninsular Malaysia) followed by 'Malaya'. Malaysia was an agricultural country whose main sources of revenue were agriculture, mining and quarrying. In the 1960s the government planned for preparation to become an industrial country and the main source of income would be from the manufacturing sector. Malaysia was recognised as one of the world's

developing nations in 1995. With the main aim to achieve the status of fully industrialised nation by the year 2020, through the National Education Policy, Malaysia stressed the importance of balanced development in terms of all dimensions namely: economically, politically, socially, spiritually, psychologically and culturally (Abu Bakar, 1994).

Education is one of the government priorities in the Malaysian Economic Plans as the aim is to equip Malaysians with essential skills to accelerate the development of human resources. There are three types of government schools throughout the country: national schools, national type (Chinese) and national type (Tamil) schools in which different languages are used as a medium. Special Education has developed in its own way, along with other developments, as a caring society was one of the important aims in the strategy to attain a developed united nation by the year 2020.

2.2 MALAYSIAN EDUCATIONAL SYSTEM

After independence in 1957, several changes took place in the Malaysian educational system. The Razak Report (1956) formed the basis for the Education Ordinance of 1957. The main educational objective was to build a united nation through the provision of a common curriculum with a Malaysian orientation. Bahasa Malaysia or Malay language as the national language was used as the main medium of instruction in school. To meet the country's needs, the aims of the Education Act and the administration of the national education system were reviewed. The Rahman Talib Report was produced in 1960 and it became the basis for the Education Act of 1961.

National education policy was reformed in order to reinforce the national education system and the National Philosophy of Education (NPE) brought by the Cabinet Committee Report in 1979. Several other reformations have been made to produce more efficient, constructive and responsive education according to the needs of the nation. The most recent reforms are supported by legislative measures formulated in 1996. To meet the needs of the 21st century and establish Malaysia as a centre of educational excellence a comprehensive reform of the education system was made. Among the changes are:

- Education Act 1996

- Universities and University College (Amendment) Act 1996
- National Higher Education Fund Board Act 1997
- National Higher Education Fund Board Act (Amendment) 2000

In Malaysia, curriculum planning and development are done at federal level. In other words, Malaysia recognizes a 'centralized system of education' where the responsibility for the implementation of the national curriculum was under the MOE and the national education system is centrally administered as a federal matter. The modification of the school curriculum was made with the aim to achieve a world-class education system and the government's vision for year 2020.

The Ministry uses a committee system in its decision-making procedures. The highest decision-making body is the Educational Planning Committee (EPU) which is chaired by the Minister of Education. This committee is concerned with the formulation, coordination and implementation of policy. There are other decision-making committees from divisions in the MOE that deal with specific issues by which national economic and social policies are translated into educational plans, programmes and projects in accordance with national aspirations and objectives.

The important department that links the schools and the MOE is the State Education Department (SED) which is responsible for the implementation of all education programmes, project and activities in the states. There are District/Division Education Offices (DEO) under the SED. The DEOs assist the SED in monitoring curricular programmes as well as providing professional advice to teachers.

2.3 MALAYSIAN CULTURE AND IT INFLUENCE ON EDUCATIONAL PRACTICE

As a multi-racial society comprising the three main races, Malay, Chinese and Indian, Malaysia has multicultural influences on its national philosophy. Owing to its unique background, children in Malaysia are being brought up in accordance with their own race, custom and religion. As mentioned earlier in this chapter, there are three mediums of teaching (home language) available at primary school level and lower secondary. Hence almost all children can attend a school which offers instruction in

their home language or the language they or their parents choose. However children of an ethnic minority such as Malaysian Siamese learn in a second language. Similar circumstances happen when children from the three major components of the national population choose to study in a non-home language school.

Generally, the majority of Malaysians are Muslim and the others practise other faiths mainly Christianity, Buddhism or Hinduism. The national culture is a result of mixed cultures, and this is used as a tool for national integrity. Social culture and interaction in everyday life among Malaysians is influenced by the culture of the group, at the family level and in general society. It has a strong effect on Malaysian schools' curriculum as the Malaysian National Curriculum fundamentally aimed for national unity.

Most Malaysian children have plenty of time for socialising after school, as the weather is warm at all times throughout the year. However, children in rural areas generally have limited opportunities to mix and socialise with peers from different ethnic groups because the majority of the rural population are from the Bumiputra whereas their counterparts in urban areas are more exposed to multi-cultural settings.

Daily greetings in national schools are normally conducted in mixed approaches; first phrases in Arabic which mean 'Peace be upon you' and followed by 'good morning/ afternoon'. The Arabic phrases are not relevant to national type schools. Nevertheless, respect and custom are blended together in values, which are emphasised through the implementation of the national curriculum. It is common that the younger child will address the elder by status such as 'brother/sister' or 'uncle/auntie' according to their age, which is also applied to non-family members to show the social line between the young, and the older people. In schools the young perceive the elders as authority figures as at home they are trained to obey the elders (Hajah Asmah, 2000).

Traditionally, children were not encouraged to speak out and some teachers regard students who speak or ask too many questions as 'troublemakers' and silence them by

negative comments (The Star, September 01 2002). The Human Rights Commission of Malaysia (SUHAKAM), in its programme for educating Malaysian of their rights, stress that it is important for the young Malaysians to be treated with a certain level of human dignity. Teachers' rigidity in implementing rules and limitation of pupils' freedom of expression were among the issues of children's rights in Malaysia.

This customs mean that children with SEN may not be understood by others owing to problems in social interaction associated with how young persons act towards others, particularly senior persons. The problems are more obvious when pupils with behavioural problems frequently fail to follow the basic social etiquette; they might be stigmatised by peers or teachers. Similar situations can be found in the national type schools though the language used as a medium is different (Mandarin or Tamil) as the same fundamental values apply in each cultural group.

2.4 SPECIAL EDUCATIONAL NEEDS (SEN) IN MALAYSIA

Historically, special education in Malaysia was to provide for two types of physical 'handicap' namely 'blind' and 'deaf'. In the 1920s, the Social Welfare Department and missionaries provided education for 'handicapped' people in Malaysia. In 1926, the first institution, St Nicholas Home and School was built by Anglican Missions. The second was the Princess Elizabeth school for the blind, opened in 1949 which became fully government aided in 1980 (Noraini, 1988). In 1954, the Federation School for the Deaf was initiated to offer academic and vocational training. The provision for the integration of 'blind' and the 'deaf' into mainstream school was initiated in 1962. Children who were slow learners and had moderate learning difficulties were acknowledged in late 1970s, and as a consequence the 1979 Cabinet Committee Report on education officially recognised these children. The elevation of the status of special education in the Malaysian education system was improved when The United Nation declared 1981 as the International Year of the Disabled Person. The enormous impact of this was the formation of Inter-Ministerial involvement for providing proper provision for the disabled. The Ministry of Education (MOE) and the Welfare Ministry were responsible for education while early detection and

intervention were taken by the Health Ministry. Since 1981 special education in Malaysia has undertaken rapid development. However, in terms of educational provision for children with disabilities, it is relatively inexperienced in Malaysia although the government acknowledged the need to provide an appropriate educational provision for the disabled. Then again, there is still a gap between the children's needs and the environment that accommodates for their diversity of ability and disability (within children's potential) (Postlethwaite and Hackney, 1989).

The 'deficit model' was used to define children with SEN as children would be categorised according to limitations in their ability to function in the area of sensory (visual and hearing), cognitive, social development/behaviour, communication, developmental skills, and numeracy/literacy (Wan Kalthom, 1991). Most Malaysian teachers have to rely on their inventive ability in overcoming their pupils' learning difficulties (Haniz, 1992). Jais and Mat Nor (1990), stressed teachers' vital role in assessing their pupils' abilities in the area of literacy and numeracy in order to decide for remedial provision in mainstream schools. The children whose educational needs could not be provided by mainstream schooling (considered by remedial teacher as totally failing to relate to mainstream provision) would be assessed by medical or other related professionals to decide their category of educational needs.

The rapidly increasing number of children with learning difficulties has led to requests for sufficient educational facilities, the establishment of new programmes and more classes to cater for these children (Sabri, 1996). The emergence of a new paradigm in recognising children with SEN comprising children with moderate intellectual impairment is in line with The United Nation Convention on the Rights of the Child in 1989, Standard Rule on the Equalisation of Opportunities for Persons with Disabilities in 1993 and the Salamanca Statement of 1994 (UNESCO, 1994). These declarations have directed national states to the development of an inclusive education system for children with disabilities and bring a huge impact on educational practice in Malaysia, especially in special education programmes for children with LD.

As a developing country, Malaysia has adopted educational policies and strategies that will eventually, it is hoped, create a quality educational programmes and a 'caring' society for disabled people. It is related to the '2020 vision' constructed by the Prime Minister in its new 'caring' policy. Special education in Malaysia is currently undergoing changes in a new education strategy. To ensure the effectiveness of SEN programmes, the ministry was massively reorganised in October 1995 and a new department, Jabatan Pendidikan Khas (JPK) or Special Education Department was established to deal with all aspects of education for children with SEN. Many of the ideas concerning the educational policy and practice for the disabled and special education were borrowed from the United Kingdom and the USA.

2.4.1 The Identification of children with SEN

Young children may change their behaviour in an unfamiliar environment. Language and cultural barriers are other factors that affect a child's performance. Hence assessing the developmental level of young children entails sensitivity to the environment in which the assessment take place. Knowledge of testing limitations and procedures is another crucial factor in successful assessment of a child's development. It is important at preschool level to use an appropriate test to screen children with SEN in the population, so that teachers may predict accurately the possible problems in a child's education and identify them before they become serious.

There are issues in screening children with SEN in Malaysia related to what to screen, the appropriate time, how to do it, as well as who should be responsible. A child is a changing person, so the suitable time for screening is a source of some debate. For example, if the screening is done at the age of five or below the child may be wrongly classified as having SEN due to immaturity and lack of social experience. The suitability of the instrument used for screening is a key factor in the early identification of children with SEN (Lindsay, 1984).

Nevertheless all children regardless of their disabilities should have equal

opportunities in terms of educational provision. The provision for developmentally delayed children could be planned to optimise their success if accurate measures are used. This has been the major aim for the MOE in Malaysia as teachers are in the front line for the identification of children with SEN. Yet they vary in personal judgement and skill/knowledge of SEN and tend to pay less attention to the inadequacies of the curriculum or school environment to provide for the child's needs.

The regulation for registration of all disabled people in Malaysia started in 1985. It was estimated at that point that 3.14 percent of the population aged 5 to 19 years were disabled whereas only 1.9 percent of the estimate were enrolled in special education schools/centres (i.e. 3 749 in special schools) (Noraini et al. 1999). The same phenomena was still to be found in 1999. This suggested that a large number of children with SEN were either not attending school at all or were in the mainstream schools. This was thought to be due to lack of regulation enforcing parents to sent their children to school though the Cabinet Report in 1979 made important recommendations with respect to equality in education, improving opportunities for special education and increasing facilities for disabled children (Noraini, 1988).

Currently, serious effort has been made by the Malaysian authority to enforce regulation for compulsory registration of disabled persons, so that they can receive proper education, training and help in finding jobs (New Straits Times, October 23 2002). The Ministry of National Unity, through the MOE as a fundamental ministry in dealing with the young disabled person has granted the local universities substantial financial allocation to carry out research leading to the identification of the disabled population (Berita Harian, October 23 2002).

2.4.1.1 Teachers' role in SEN screening

Teachers' views and perceptions of SEN vary greatly. Consequently what is seen as SEN by one teacher might be interpreted differently by another, especially in the case of behavioural problems (Fraser, 2002), besides teachers in different areas of

education may give priority to different concerns, for example placing a higher value on basic skills such as the 3R's rather than on the child's ability to socialise, to share or to co-operate with peers (Drummond, 1984).

Prior to 1990 the identification of SEN cases in Malaysia would normally have been done on the basis of physical, sensory and mental disabilities. Pedagogically, special education was defined by specific methodologies to fulfil the needs of children with disabilities through various modifications of the Malaysian National Curriculum designed to meet the individual needs (UPK, 1989).

At present, the process of screening a child's proficiency in reading, writing and counting is carried out using a standardised instrument: Instrument Penentu Pencapaian 3 M (IPP3M) or 3R's Achievement Test (JPK, 1999). The IPP3M was developed by the Special Education Department in 2000 and is used to screen pupils at primary and lower secondary level. There are many reasons why the identification of children with SEN in Malaysia is essential. The most important are to reduce the number of dropouts and prevent behavioural problems, which are correlated with academic failure in Malaysian School (Haniz, 1992). As support for teachers in dealing with children with SEN in Malaysia is not as extensive as it is in developed countries (in many instances it does not exist), identifying these children is an acute problem as there is a lack of appropriate standardised or formal screening procedures.

Identification of young Malaysian with SEN before the schooling period has essentially been dependent on parents themselves. Consequently, children without any sign of disabilities typically enter formal primary education at the age of six. Hence, identifying children with SEN in mainstream classroom has became an important issue. As every child must be able to master the 3R's in his or her first three years of primary school, those with SEN are formally recognised at this stage.

2.5 PRESCHOOL EDUCATION IN MALAYSIA

Preschool provisions for Malaysian children began in the early 1950s and were set up

by private organisations. These private schools were located in urban areas since the children of educated and well to-do parents were the clients of the programmes (Hasnah Udin, 1983). In 1972, the Ministry of National and Rural Development made their first move in childhood education to cater for the needs of children who did not have a chance to enter the private preschool programmes. The programme known variously as 'Kemas' or 'Tabika' preschool programmes was established mainly in rural areas (Ministry of National and Rural Development, 1994). There were 7 065 Tabika in 1999. Other organisations came forward, developing preschool education programmes according to the Kemas model. Jabatan Perpaduan Negara, was one of the most vigorous organisations, and developed the preschool programme known as Tadika. These measures help manage the welfare of preschool children in rural areas, squatters' areas, estates and plantation areas. There are now a few thousand private providers and the programmes operate under powers given through the respective religious bodies as well as Government/quasi-government agencies and voluntary bodies. Though these programmes have helped in the expansion of the preschool movement in Malaysia, preschool demographics and regulations have become diverse in terms of the quality of learning environments, since teachers' qualifications and the curriculum vary according to the programmes' operators. Hence parental awareness of the characteristics of a good preschool programme is important (The Star, September 22 2002).

There were 506 000 preschool-aged children in Malaysia in 1996 (Jabatan Perangkaan Negara,1996). In 1999 the number of children aged of 5-6 years had increased to 524561 and 84% of them had the chance to attend a preschool programme (CDC, 2000). Assuming that at least 10% of the school-aged population would have disabilities or SEN (World Health Organization, WHO), there must therefore have been a large number of pupils of preschool age in Malaysia with SEN, yet only 27 of them were studying in special programmes run by the JPK (Special Education Department) throughout the country. Very little research has been done to assess the opportunities for children wit SEN to receive an education suited to their needs.

In 1999 National University of Malaysia and the MOE in cooperation with UNICEF carried out research on the issues of young children with SEN. The research findings indicate that 9% of Malaysian Preschool had SEN (Noraini et al., 1999). The finding supports the afore-mentioned WHO figures. The study also revealed that the students with SEN, constituting 23 % of the preschool sample were scattered among 294 preschools with the majority studying in the normal preschools. These children were following the same curriculum and activities and sharing the same facilities provided for normal children. Additionally, the same study found that the majority of teachers in preschools with SEN children have only very limited understanding of their needs and lack the expertise required to deal with them.

2.5.1 Prasekolah Kementerian or The MOE preschool programmes

Prior to 1992, most children from middle and upper income families received preschool education for at least one year through the many private preschool programmes whereas the majority of children from low income families did not because the number of places in the government-aided preschool education Kemas was limited. Consequently children from lower SES groups were educationally disadvantaged. The MOE had set up 1131 programmes in 1992, formerly known as 'Tadika Annex' and currently referred to as Program Prasekolah Kementerian or the MOE preschool Programme (CDC, 1992). The attempt was to cater for preschool-aged children from low-income families, providing them with the opportunity to receive a preschool education in selected primary schools.

From 1992 onwards, the MOE planned to increase free preschool education for lower income families. Teachers for early childhood education were trained at certificate level in various Colleges of education under the MOE. The number of qualified teachers for preschool education rapidly increased from 1972 to 1993.

2.5.2 Preschool curriculum in Malaysia

Early childhood education is a developing area of educational provision in Malaysia

and is currently one of the top priorities in the political agenda. Research findings have shown that children benefit from preschool experiences and the impact may last to the course of their later lives (Sylva, 1994). The MOE study of the impact of preschool intervention on the Primary One to Three pupils in Malaysia shows that the pupils who had received preschool education performed better in achievement tests compared to their counterparts who had not (EPRD, 1996).

The Curriculum Development Centre (CDC) of the MOE had conducted in-depth research into the status and provision of preschool education in Malaysia in the 1970s: this was followed by another major research by EPRD in the 1980s (CDC, 2000). The MOE produces "Guidelines for Preschool Education". These were first published in 1973 with an updated version following in 1986. However in 1993 a new set of guidelines was produced and distributed throughout the country. With the enactment of the Education Act 1996, significant changes were made to the preschool education programme, the most significant being the inclusion of preschool education within the purview of the national education system. The Education Act 1996 also requires all public and private preschool agencies to comply with section 22 (Malaysian government, 1996) which states that "the programmes and activities of every kindergarten shall be based on the curriculum guidelines for kindergartens approved by the Minister" (p. 24) and the corresponding regulations to adhere closely to the guideline of Preschool Education 1996. Preschool education policy was revised to improve the coordination and quality of the provision of preschool education in the public and private sectors. The Guideline was revised in 1999 (CDC, 2000)

2.5.3 Preschool Education for children with SEN in Malaysia

A good pupil is obedient and submissive towards his/her teacher, is a common response from teachers and adults during a candid discussion. The above perception is understandable, shaped as it is by the cultural values of the Malaysian society.

All children are entitled to appropriate free education under the Malaysian educational system. This is in line with the declaration of 'education for all'.

Regardless of their disabilities, children are eligible for appropriate educational provision. Though normal Malaysian children at the age of five and six years undergo non-formal schooling, their counterparts who have been diagnosed with SEN have very limited opportunities to receive preschool lessons suited to their needs (Noraini et al., 1999). In 1999, all the special schools at primary level had the opportunity to organize early intervention programmes which had given priority to the preschool children (5-6 years). By July 2000 the number of such programmes was increased from the 7 classes providing early intervention activities for the children with hearing or visual impairment in 1999, to 29 including classes geared towards children with learning disabilities (Jabatan Pendidikan Khas, 2001).

2.6 INCLUSIVE EDUCATION

As mentioned above, before 1981, children with SEN in Malaysia had little chance to receive educational intervention appropriate to their special needs owing to lack of adequate programmes and facilities. The shortage of trained teachers in normal schools, in addition to special schools, was one factor contributing to the limitation. Hence disadvantaged children with disabilities were excluded from mainstream education. Nevertheless, with the increased interest in special educational needs in general and by professionals in particular, SEN expanded from being just a health issue to an educational issue, and also to one of employment and eventually law (Abdul Shukur, 2000). Voluntary organizations run by community groups and parents of disabled children as well as concerned educators have played a very important role in providing schooling for children with SEN and they indirectly play an important role as a pressure group for issues related to the rights of disabled persons in Malaysia. The school community is the prime society of social-ethical and physiological-educational endorsement for successful inclusion of children with SEN. Nevertheless, the implementation of inclusive education (IE) is a radical educational innovation in Malaysia especially for children with learning disabilities. Avoiding confusion will not be easy, as the implementation of IE needs necessary changes so that the initial stages of setting up inclusion can get on the right path. Change cannot be done immediately or unilaterally (Clough and Lindsay, 1991) to minimise the

negative effects on IE. One of the main issues is teachers' knowledge of the educational needs of pupils with SEN as special education has not traditionally been a component of their training. Bahagian Pendidikan Guru (BPG) or the Teacher Education Division only included the component of IE into the curriculum of teacher training programme in 1995, so those who were trained earlier may not have received any formal training on IE. See Haniz (1998) for more detail on IE in Malaysia.

2.7 CONCLUSION

The development in Malaysian political schema, and the alterations in educational policy and practice have an important account in the paradigm shift for the expansion of special education in Malaysia. Triggered by the concept of a 'caring society', special education programmes as well as preschool education have been given higher priority in the educational and political agenda. One particular group of children with SEN are those designated as having ADHD. However, mastery of basic skills in literacy and numeracy is the core emphasis in academic achievement and children with SEN regardless of their impairment are included. In particular those with ADHD in inclusive settings are expected to achieve the same standard of scholastic attainment as their normal peers as they are expected to sit the same national examinations. The implementation of IE and the emerging issues of ADHD in Malaysia will consequently have an effect on current educational administration and practices. To establish suitable programmes for ADHD in inclusive settings, a better understanding of the nature of ADHD and related issues is needed. The next chapter discussed the explanatory review of ADHD.

Chapter 3

ADHD: REVIEW OF RELATED LITERATURE

Attention deficit hyperactivity disorder (ADHD) is a developing subject. Its nature is complex and many aspects of this disorder are still under investigation. The nature of ADHD is contested in that some researchers have focused on biological causation and hence biological interventions particularly drug treatments, whereas others have argued that ADHD is socially constructed and that different prevalence rates, for example, reflect differences in methods of identification and diagnostic approaches rather than true differences in numbers of children (Purdie, Hattis and Carrol, 2003). Reviews of literature and studies on ADHD are presented in this chapter according to themes. Most of the themes are interrelated though they are examined under separate subheadings. In order to discuss the relevant subjects in studying Malaysian children with ADHD, the review includes studies on teachers' and pupils' perspectives of ADHD as these two aspects are important variables of the present study.

The research on ADHD is mostly from the USA as well as other developed countries although references are made to the situation in Malaysia. The majority of the literature used is within the past 10 years, though some older materials were used with the aim to compare the conflicting issues on ADHD as well as the development of these issues. The review also includes another area relevant to the findings of the present study: classroom strategies for children with ADHD, the way pupils with ADHD and teachers interact as well as a brief development of classroom interactions, particularly compensatory measures for pupils with ADHD.

This study concerns preschool children who have ADHD characteristics, their peers as well as the environments where the social interactions and learning situations take place. Hence, this review covers studies related to aspects that dominate the nature of ADHD and its current issues as well as aspects of learning and social environments related to ADHD.

It should be pointed out that ADHD has its root in the medical domain, which has

subsequently been widened by researchers from other fields especially psychology and education. However this medical origin influenced its conceptualisation that led to the use of ADHD terminology. Multiple changes have taken place in diagnostic criteria for ADHD since the 1980s as researchers tried to develop a more appropriate explanation of ADHD.

Studies related to ADHD in Malaysia however are difficult to come across due to the newness of ADHD issues in Malaysia. However the critical issues such as factors that are responsible for the increase of children with ADHD-like behaviour problems, and the most effective ways of preventing and dealing with the problems (ADHD) are congruent with the growing concerns in developed countries. Malaysia in an effort to set a new educational horizon for children with ADHD, as mentioned in Chapter 2 recognised 'ADHD' as one of the important categories in SEN rather than as previously merged within the learning disabilities group. Parents of children with ADHD symptoms are more aware of their children's needs and the pressure for proper educational provisions is growing (Ministry of Health, 2002). Gradually ADHD has become an important educational issue and this subject is one of the main concerns on the Malaysian MOE agenda. Nevertheless, the policy and educational provisions regarding children with ADHD are still at the initial stage of discussion. As mentioned in Chapter 2, the medical diagnostic procedure was used to categorise this disorder in the Malaysian context and the diagnostic criteria set by American Psychiatric Association (APA) are frequently used in the procedure. Educationally, there is a lack of guidance for Malaysian teachers in terms of regulating practical features regarding children with ADHD.

The review begins with the history of the ADHD concept followed by an explanation of ADHD in terms of classification by the most dominant diagnostic criteria outlined by the APA as well as by the WHO (ICD-10).

3.1 HISTORIES AND CONCEPTUAL SHIFT OF ADHD

The symptoms of ADHD have been defined and labelled in numerous ways since the

early 1900's. Researchers from many disciplines tried to categorise the disorder and a wide range of theories have proposed explanations for ADHD symptoms. Some focus their research on single factors in the aetiology of ADHD. However, for the past two decades, three core clusters of behavioural symptoms have been used in enlightening the concept of ADHD which are: poorly sustained attention, impulsiveness and hyperactivity (American Psychiatric Association, 1980, 1987; World Health Organization, 1978, 1990). The disorder is not only common in childhood but ADHD symptoms also persist into adult life (Weiss et al., 1999).

The British Psychological Society (1996) divided the growth of the labelling term for the disorder into three phases. The early phase was the period of "organic deficits of moral control'. This was followed by use of the term Minimal Brain Dysfunction (MBD) as a result of the belief that the cause of this disorder is brain damage which is difficult to detect by regular procedures. In 1957 the term, which focuses on children's hyperactivity, 'Hyperkinetic Impulsive Disorder' was used. Subsequently the concept changed from Hyperactivity to Attention Deficit and renaming of the disorder followed accordingly. Based on the literature reviewed in the history of ADHD as cited by many authors (Taylor et al., 1998; Cooper and Ideus, 1996; Sandberg and Barton, 2002; and Green and Chee, 1995), the conceptual shift may be summarised as follows.

The progression from 'Organic Deficits of Moral Control' to MBD: The description of hyperactive children was first reported by Still in 1902. The symptoms displayed by the children were termed as aggressive, defiant, resistant to discipline, excessively emotional or "passionate", showing little "inhibitory volition", lawless, spiteful, cruel, dishonest, impaired in attention, overactive, prone to accidents, and a greater threat to other children due to aggressiveness (cited in Cooper and Ideus, 1996; The British Psychological Society, 1996; Sandberg and Barton, 2002). The label 'Defect of Moral Control' was used to classify the children. However, the idea of grouping such children into distinct categories gained interest from others working in the field, because the impact from the First World War produced people with encephalitis who had some of the characteristics described (The British Psychological Society, 1996).

Research findings did not support the demonstration of 'true brain damage', therefore the more gentle term 'Minimal Brain Damage' was used. The strategy implied that some form of brain damage or central nervous system dysfunction was responsible for the behavioural symptoms (Cantwell, 1986) but in the absence of hard evidence of brain damage per se (e.g. cerebral palsy).

The era of motor overactivity (from MBD to Hyperactivity): In the1960s the terms used to describe the disorder shifted to a behavioural expression as the defining features of a hyperactive child syndrome was described (cited in Green and Chee, 1995). Researchers were starting to describe the characteristic problems in relation to attention and impulse control deficit. However, in this era motor overactivity was viewed as the primary symptom of the disorder (Cantwell and Baker, 1991). Hyperactivity was described as a symptom and generally accepted by the psychological community as the correct name for the disorder. Consequently, the category of Hyperkinetic Reaction of Childhood was used in the Diagnostic and Statistical Manual of Mental Disorders (2nd ed.) (DSM-II; American Psychiatric Association [APA], 1968). The defining features of hyperactivity were overactivity, impulsivity, short attention span, low frustration tolerance, distractibility, and aggressiveness. Overactivity was thought to be the primary feature. However this definition ignored the fact that many children exhibited attention deficits without any signs of hyperactivity.

The period of Attention Deficit: The idea that inattention is more important than hyperactivity was promoted by Virginia Douglas in 1970s (cited in Green and Chee, 1995; and Cooper and Ideus, 1996). The key feature that distinguished the children's disorder was shifted to attention and not the hyperactivity itself, and sustained attention problems could emerge under conditions where no distractions existed. According to Cantwell & Baker (1991), the vast research on cognitive studies led to the widely accepted view of the disorder as being primarily a deficit in attention and concentration abilities. In 1980, the disorder was renamed attention deficit disorder with hyperactivity (ADD+H) and attention deficit disorder without hyperactivity (ADD-H). ADD-H was relegated to a category called undifferentiated ADD.

Research began to shift from hyperactivity to attention issues. For example children with hyperactivity were also found to have problems sustaining attention and controlling impulses. Moreover, the views from influential researchers regarding the effects of attention on children's performance, led to the establishment of attention deficit disorder as a category in DSM III, published in 1980 (APA, 1980). The category in the previous DSM II, Hyperkinetic Reaction of Childhood was subdivided into two categories: Attention-deficit with Hyperactivity (i.e., ADHD) and Attention-deficit Disorder Without Hyperactivity (ADD/WO) in DSM III. Therefore, DSM III was used to diagnose those with an impairment of attention without hyperactivity.

Next era of ADHD; New insights emerged to challenge the concept that the key feature that differentiated ADHD was attention deficit (as sustained attention problems could emerge under conditions where no distractions existed) and not the hyperactivity and theories argued that ADHD probably represents more than one disorder (Barkley, 1997a).

3.1.1 Evolution of the formal diagnostic criteria of ADHD: The Diagnostic and Statistical Manual of Mental Disorders (DSM)

As mentioned earlier the name of the disorder was changed many times over the years. Every name used reflects the aetiological concept of the disorder at a particular time. The American Psychiatric Association published a series of the Diagnostic and Statistical Manual of Mental Disorder (DSM), which consists of standardised diagnostic criteria described by behavioural symptoms for many psychiatric disorders. The first manual was published in 1952 and it was periodically reviewed and modified based on current research and field trials. Though DSM has amended the description and definition several times the triad of symptoms (inattention, hyperactivity and impulsivity) has remained consistent as key factors in ADHD. The development the formal definition of ADHD in the DSM is summarised and simplified as in Table 3.1.

Table 3.1: The development of ADHD definition and diagnostic criteria in the Diagnostic and Statistical Manual of Mental Disorders (DSM).

Published	Name	ADHD criteria
1968	DSM-II	° *'Hyperkinetic reaction of childhood'* used to define hyperactivity ° Characterised by hyperactivity, restlessness and short attention span
1980	DSM-III	° *'Attention Deficit Disorder' (ADD)* used to redefine attention difficulties with assumptions that the difficulty is sometimes independent of impulsivity and hyperactivity problems. ° Inattention was the central feature. ° Two subtypes of ADD were presented; i) ADD/H with hyperactivity (characterised by inattenton impulsivity and hyperactivity); and ii) ADD/WO without hyperactivity (characterised by inattention and impulsivity)
1987	DSM-IIIR	° *'Attention Deficit Disorder' (ADD)* concept was revamped to emphasise hyperactivity and changed to Attention Deficit Hyperactivity Disorder (ADHD) ° Uni-dimensional disorder without any subtype. All three symptom domains were involved but without specific thresholds for each domain.
1994	DSM-IV	° 'ADHD' used although the definition changed in this edition, as the disorder was categorised into two groups; inattentive and hyperactivity/impulsivity. ° Three subtypes were defined; i) ADHD primarily Inattentive (differs from ADD/WO in DSM III because it does not require the presence of impulsivity symptoms) ii) ADHD primarily Hyperactive/Impulsive (is a new group because it is characterised by hyperactivity and impulsivity symptoms and inattention is not required to be present). iii) ADHD Combined type (similar to

Published	Name	ADHD criteria
		ADD/H in DSM III) ° Typical manner of children affected by ADHD was listed in this version in terms of the time symptoms appear, and the factors that may complicate the diagnosis ° Notes on the caution needed to be considered during the diagnostic process for children as well as adults were given with some recommendations.
2000	DSM-IV-TR	° Major changes were on the descriptive text and some changes were made on diagnostic criteria for Tourette's Disorder, Dementia of the Alzheimer's type, Personality change due to a general medication condition, and Exhibitionism; Frotteurism; Pedophilia; Sexual Sadism; Voyeurism. Descriptive text and codes for ADHD remain as in DSM-IV

Extensive changes in theories of the nature and aetiology of ADHD continued until 1990s when 'executive dysfunction' was introduced (Barkley, 1997a). Many studies related to developmental psychopathology, including those that focused on ADHD conveyed their interest on the area of the dysfunction. The review of studies of 'executive functions' in four developmental psychopathologies (ADHD, conduct disorder, autism, and Tourette's syndrome) concluded that deficits are consistently found in ADHD and autism, with specific impairments in motor inhibition being uniquely associated with ADHD (Pennington & Ozonoff, 1996).

There have continued to be differences of opinion on the concept of ADHD and attempts have been made to reconceptualise ADHD based on research findings. Some researchers challenged the current theories of ADHD by considering cognitive problems as primary features of ADHD. Based on the findings of Barkley's (1998) work on behaviour and cognitive functioning, working memory was proposed as having a major role in attention keeping. The idea to reconceptualize ADHD as a cognitive disorder was based on research findings regarding individual differences in terms of working memory and inattention which were related to academic

achievement (Tannock and Martinussen, 2001). The move has implications for instructional settings and methods of treatment for ADHD.

3.2 DIAGNOSTIC CRITERIA AND DEFINITION FOR ADHD

People with ADHD have been recognised and treated for years in many countries. Diagnostic criteria are used to provide a standard indication to assess the presence or the absence of ADHD in individuals. However ADHD is not a simple condition that can be easily diagnosed as it is a developmental disorder, characterised by heterogeneous behavioural symptoms (as mentioned above) and it occurs without any physical sign.

Individuals with ADHD have impairments in functional areas associated with learning, behavioural and social ability (Barkley, 1997b; Marshall et al., 1997; Zental, 1993). Studies shows that ADHD may be accompanied by comorbid conditions such as learning disabilities, and other disorders. People who have ADHD with comorbid disorders, particularly oppositional defiant disorder or conduct disorder as well as dyslexia, may suffer more problems in education and daily life functioning than those with ADHD only (Green and Chee, 1995; Kalff et al., 2002; Knivsberg et al., 1999). However the main problems that relate to ADHD concern attention span, impulse control and activity level. This disorder emerges in a continuum from mild, moderate to severe rather than as a categorical disorder. Individuals with ADHD vary in the symptoms. Some are quiet, dreamy and inattentive whereas others are impulsive, and constantly on the move but can listen on the run. Hence, the ADHD population is a complex, heterogeneous group in many ways (Rutter, 1984). Nevertheless, many of them show both inattentive and hyperactive/impulsive behaviours (Tannock and Martinussen, 2001) and consequently these individuals may have more severe functioning problems. Because there is no biological marker to differentiate ADHD and normality, and all clinical criteria for diagnosis are behavioural, it is difficult to decide, particularly with young children, whether the child's problems are at the severe end in the normal range of behaviours or severe enough for an ADHD diagnosis (Kalff et al., 2002).

Many theories have emerged to explain ADHD. The main current theory classifies it as a disorder of self-control, characterised by extremes of inattentiveness and hyperactivity/impulsivity. Diagnostic terminology and criteria of ADHD have been developed and changed according to the conceptualisation of the core deficits associated with the disorder. The American Psychiatric Association (APA, 1994) in the DSM-IV defined ADHD as a disorder characterised by the presence of a set of destructive behaviours displayed by an abnormal level of inattention, hyperactivity/impulsivity or the combination of the two. These problems would be severe enough to cause significant impairment in at least two different settings. The symptoms were divided into two primary groups; inattention and hyperactivity/impulsivity. DSM-IV (1994) defines an individual as having ADHD if all the five criteria are fulfilled (see Table 3.2). The fulfilment of the criteria is crucial in avoiding misdiagnosis of the conditions.

Table 3.2: Criteria for ADHD diagnosis in the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (DSM-IV).

DSM-IV: Criteria for ADHD diagnostic

A/

1. Six or more of the following attention deficit disorder symptoms lasting no less than 6 months:

   Inattentiveness

   - not paying attention to details or making mistakes in school work, job or other activities due to negligence
   - having difficulties with keeping attention in doing homework or at play
   - often not listening even when directly spoken to
   - often not following instructions and not finishing schoolwork, chores or office responsibility
   - often having difficulties with organizing assignments and activities
   - frequent avoidance, dislike or refusal of assignments that demand lasting mental effort
   - often losing things that are needed to fulfil tasks or activities
   - often distracted by external influences
   - often forgetting daily activities

2. Six or more of the following hyperactivity and impulsiveness symptoms that last no less than 6 months

   Hyperactivity

   - often shaking their legs or arms, or wriggling in their chair

- getting up from the chair in the classroom or elsewhere where expected to sit still
- often running excessively or climbing in the situation where it is not appropriate
- often having problems when calm and peaceful playing is required
- often in motion or as if run by a motor
- often talking too much

Impulsiveness

- often abruptly answering even before the question has been completed
- often having trouble with waiting in a queue
- often bothering or disrupting others

B/
Some of the hyperactivity, impulsiveness or attention deficit disorder symptoms that cause impairment appeared before the child was 7

C/
Some of the impairment resulting from symptoms is manifested in two or more life situations

D/
There must be clear evidence of clinically significant damage to function socially, academically, or at work.

E/
The symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (e.g., Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder).

On the other hand, for diagnostic classification of the disorder of the comparable traits, World Health Organization (WHO) 1990, produced criteria for Hyperkinetic disorder in the International Classification of Diseases 10th edition (ICD-10) as shown in Table 3.3:

Table 3.3: Criteria for Hyperkinetic Disorder in International Classification of Diseases 10th edition (ICD-10)

ICD-10 : Criteria for Hyperkinetic Disorder

A Demonstrate abnormality of attention and activity at home, for the age and developmental level of the child, as evidenced by at least three of the following attention problems:

- short duration to spontaneous activities
- often leaving play activities unfinished

- over-frequent changes between activities
- undue lack of persistence at tasks set by adults
- unduly high distractibility during study, e.g. homework, or reading assignment
- and by at least two of the following activity problems: continuous motor restlessness (running, jumping etc.)
- markedly excessive fidgeting or wriggling during spontaneous activities
- difficulty in remaining seated when required

B. Demonstrate abnormality of attention and activity at school or nursery (if applicable), for the age and developmental level of the child, as evidenced by at least two of the following attention problems:

- undue lack of persistence at tasks
- unduly high distractibility, i.e. often orientating towards extrinsic stimuli
- over frequent changes between activities when choice is allowed
- excessively short duration of play activities
- and by at least two of the following activity problems: continuous motor restlessness (running, jumping etc.) in school
- markedly excessive fidgeting or wriggling during structured situation
- excessive levels of off-task activity during tasks
- unduly often out of seat when required to be sitting

C. Directly observed abnormality of attention or activity. This must be excessive for the child's age and developmental level. The evidence may be any of the following,

- direct observation of the criteria in A or B above, i.e. not solely the report of parent and/or teacher
- observation of abnormal levels of motor activity, or off-task behaviour, or lack of persistence in activities, in a setting outside home or school (e.g. clinic or laboratory)
- significant impairment of performance on psychometric test of attention

D. Does not meet criteria for pervasive developmental disorder, mania, depressive or anxiety disorder.

E. Onset before the age of 6 years.

F. Duration of at least 6 months.

G. IQ above 50

Note: The research diagnosis of Hyperkinetic disorder requires the definite presence of abnormal levels of attention and restlessness that are pervasive across situation and persistent over time, that can be demonstrated by direct observation, and that are not cause by other disorders such as autism or affective disorders.

Eventually, assessment instruments should develop to the point where it is possible to take a quantitative cut-off score on reliable, valid and standardised measures of hyperactive

behaviour in the home and classroom, corresponding to the 95th percentile on both measures. Such criteria would then replace A and B above.

**From the International Classification of Diseases (10th Ed.). World Health Organization, Geneva, 1990.*

To mark ADHD cases, one of the diagnostic criteria set in DSM-IV is that the impairment signs must have occurred before the age seven because ADHD has been considered a disorder that arises during early childhood. When the symptoms occur after early childhood, it is assumed that the symptoms are reflections of other psychiatric condition such as depression or response to failure. The implication is that children who start to have the symptoms after seven years old cannot be included as ADHD. However there are people with ADHD who had no obvious symptoms of ADHD before age seven (Pineda et al., 1999). This is one of the contentious issues related to ADHD diagnostic criteria.

Both diagnostic criteria mentioned above require behavioural symptoms in defining ADHD; and they must be maladaptive and inconsistent with developmental level. Some researchers have argued that symptoms for ADHD in DSM and ICD taxonomies are not well defined (for example; Taylor, 1998). There are also differences in requirements between ICD and DSM criteria: for example, the inattentive criterion is required in the diagnosis of hyperkinetic disorder in ICD-10 but according to DSM, it is possible to have ADHD without being inattentive. The differences between the two diagnostic systems create a practical gap and also influence the prevalence rates of the disorder in different countries/populations as between the USA and the UK. European health professionals recognise Hyperkinetic disorder rather than ADHD and currently this disorder is used to describe children with severe hyperactivity. However, Hyperkinetic disorder is seen as a subset of ADHD diagnosis by many scholars because the criteria set by ICD-10 provide a similar diagnosis although the condition focuses on severe cases (Cooper and Ideus, 1996).

The diagnostic criteria of ADHD set by APA in the DSM-IV seem to be more flexible, allowing for a wider range of problems whereas the criteria set for

hyperkinetic disorder in ICD-10 are more stringent and there is no non-hyperactive subtype in it.

3.3 ADHD SUBTYPES

Children with ADHD are unique and no two of them present in the same way. Different children experience different complications and have different characteristics, react differently in different environments. The debate on the dimension of ADHD diagnosis was whether it is conceptually a uni- or a multi-dimensional disorder (Barkley, 1997a; Chhabildas et al., 2001; Marks et al., 1999). For example the theory of poor executive function relates ADHD with poor self-control and self-regulation. However the idea is more applicable to individuals with symptoms of hyperactivity /impulsivity in addition to inattentiveness and those with inattention problems alone are not catered by this theory. The ADHD classification also involves educational issues as ADHD is associated with types of learning difficulties or academic impairments (Marshal et al., 1997).

a) *ADHD Inattentive type (ADHD/IA)*

Children in this group exhibit multiple inattentive symptoms with a few, or without, hyperactive/impulsive symptoms. They have great difficulties getting focused on task or activity although they may able to sit still. The common risk in this subtype is the teacher may overlook these children's needs (Cooper and Ideus, 1996; Lovey, 1999). Lovey argued that the needs of children with ADHD without hyperactivity were easily overlooked by their teachers as they go through their school life without disrupting the class and remain undiagnosed (until later in their life). Lovey stated that;

> " Attention deficit without hyperactivity is as detrimental to a child's education and subsequent mental health as the type with hyperactivity but is less likely to be referred for diagnosis". (p 180)

In terms of 'behavioural activity style' they are likely to show 'underactivity' and are frequently described as lethargic, day-dreamy and sluggish. This subtype is more frequently associated with girls (Taylor et al., 1998).

b) ADHD Hyperactivity/impulsivity type (ADHD/HI)

ADHD/HI is a category in DSM-IV created to identify children who are extremely active but do not display gross inattention. Children from this subtype display multiple hyperactive/impulsive symptoms. They do not display significant attentional problems. They are able to pay attention to a task but lose focus because of hyperactivity or impulsiveness and frequently have trouble in controlling impulse and activity. This subtype is more typical in boys (Taylor et al., 1998). Burns and Walsh (2002) studied the influence of hyperactivity and impulsivity symptoms in the development of other disorders in 752 children. From this longitudinal study they found the hyperactivity/impulsivity (HI) factor was able to predict higher-level of Oppositional Deviant Disorder (ODD) factors in subsequent years whereas ODD factors did not predict of HI factors across the 2-years interval. They concluded that hyperactivity and impulsivity aspects of ADHD may influence the development of ODD behaviours.

c) *ADHD Combined type (ADHD/C)*

Children from this cluster of subtype have both conditions in a) and b). According to Fowler (1999) this subtype is the most common amongst ADHD cases. A key characteristic is physical impulsivity. Children with this subtype are likely to be at greater risk for other psychiatric disorders such as Oppositional Deviant Disorder (ODD) and Bipolar Disorder (BD). The child with hyperactivity is more likely to be rejected by peers owing to antisocial behaviours and be at a risk of suspension from school or referral to SEN provision (Barkley, 1997b)

3.3.1 Similarities and differences between the subtypes

The subtypes of ADHD reflect the differences in individual functioning. Behavioural activity 'style' is used to label the types of ADHD in children. The comparison of the ADHD subtypes is simplified in Table 3.4 (Barkley, 1997a; Willcutt et. al, 2000; Sandberg, 2002; Cooper and Ideus, 1996).

Table 3.4: The comparison of behavioural and cognitive dimensions related the nature of children with different subtypes of ADHD

Subtypes	**ADHD/IA**	**ADHD/HI**	**ADHD/C**
Behavioural dimensions	Initial traits: Non-hyperactive, dreamy, inert	Hyperactive	Hyperactive
Activity level and attention	Less overt behaviour problems: described as sluggish, lethargic, and day-dreamy.	ADHD/HI do not have general attention problem as in ADHD/IA. Specifically related to distractibility. Related to memory retrieval problems	In addition to characteristics in ADHD/HI, ADHD/C are often described as boisterous, impulsive, overactive, and excitable.
Accompanying disorder	Likely to have comorbid disorder and associated with greater internalising problems	Associated with problems externalising	Likely to have comorbid disorder and associated with externalising problems
Peer relationships	Deficit in social performance and the nature of unpopularity is more on socially withdrawn. Tend to be neglected.	Peer rejection associated to deficit in social performance and the nature of unpopularity is actively disliked	In addition to characteristics held by other two subtypes, ADHD/C has severe condition.
School performance	Higher rate of learning disabilities due to inability to pay attention and easily distracted. Completing projects is difficult and frequently overload on multiple tasks	Learning problems due to impulsivity related behaviours	More learning problems due to many sources; inattention, behaviours
Motivational styles	Deficit in motivation; experience greater academic problems due to in-put problems	Deficit in motivation; academic problems due to out-put problems	Deficit in motivation; academic problems due to out-put problems
Treatment and medication	Little is known of reaction to medication	Commonly treated by medication	Commonly treated by medication

Children with ADHD are stereotypically hyperactive but there is clear dissimilarity

between ADHD/IA and ADHD/C. Raters tend to relate items such as inability to complete tasks and poor organizational skills to ADHD/IA whereas items such as acts without thinking, shifts from one activity to another and frequently interrupts others were used to endorse the behaviours of children with ADHD/C (Standford & Hynd, 1994). Children with ADHD inattentive subtype were found typically to behave more similarly to children with learning disabilities than those with other subtypes of ADHD (Marshall et al., 1997). Barkley (1997a) argued that the nature of problems associated with children in different subtypes of ADHD is dissimilar, for example socially withdrawn and greater academic problems are more likely to be found in children with ADHD/IA subtype whereas problems like aggression, oppositional behaviour and other externalising problems are associated with children with ADHD/C.

Barkley (1997a) proposed inattentive and combined subtypes as different form of inattention problems. The idea that ADHD/IA and ADHD/C were different was based on the facts that the attention problems associated with both subtypes are varied and different (Taylor, 1998; Barkley, 1997a; Marshall et al., 1997). For example, Marshall et al. in comparing 20 students with ADHD/IA and 24 students with ADHD (other subtypes) found that the achievement of ADHD/IA students was much lower than students of other subtypes and they hypothesized that students' ability to master abstract symbols was interfered with by inattention problems. In line with those arguments, Schamitz et al. (2002) also suggested that there were differences among ADHD subtypes in terms of cognitive profiles although all of them were more likely to be rated as below average or failing in school. Thirty untreated adolescents with ADHD aged 12 to 16 were assessed by Schamitz et al. and they found that those with ADHD/IA performed more poorly than controls on academic whereas those with ADHD/C presented more social impairments than the controls. Interestingly, ADHD/HI did not differ from controls on either measure and performed better than ADHD/C and ADHD/IA.

ADHD/IA has non-specific attention problems which are related to deficiency in sensory processes, poor focussing of attention and weak information processing.

According to Taylor (1998) and Willcutt et al. (2000) attention problems in this subtype are usually associated with school failure and learning problems. Children with this subtype are inert, dreamy and non-hyperactive. On the other hand children with ADHD/C have attention problems which are more specific and related to distractibility and reduced persistence. The problems are associated with memory retrieval problems, and destructive behaviour which leads to peer rejection. Contrastingly, in terms of academic difficulties, children with ADHD hyperactivity only had fewer problems compared to inattentive or combined subtypes (Wheeler and Carlson, 2001: Schamitz et al., 2002).

Motivation (conscious, wilful, deliberate behaviour; consciously choosing to apply effort) is a potential contributing factor to academic performance. Children with ADHD often demonstrate behavioural problems including lack of motivation. Motivation difficulties increase the risk of poor academic performance (Carlson et al, 2002). Children need to learn the way to develop habits and patterns of educationally appropriate and socially effective behaviours. Taylor (1998) and Gaultney et al. (1999) suggested that attention problems might be a result of changes in motivational processes because they apparently occurred during unwelcome or tedious tasks. Hence motivation has been hypothesized as both a cause and effect of ADHD.

Many variables impair learning processes for children with ADHD in mainstream classrooms. Each subtype may have differential impact on children's learning processes.

3.4 THE PREVALENCE OF ADHD

ADHD is one of the most controversial conditions of childhood. It appeared to be abundant in empirical findings of reports in the area of school psychology. Wodricha and Schmittb (2003) have found that ADHD is the most frequent paediatric topic in the school psychology literature. ADHD is categorised together with ODD and CD in the disruptive behaviour disorders (DBD) group in the DSM-IV (1994) and DSM-IV-TR (2000). Recent studies show that ADHD is the most common in children and adolescents (Garland et al., 2001; Wilens et al., 2002). Estimates of prevalence of

ADHD vary widely between studies but DSM-IV estimated 3-5 % of school age children have ADHD.

3.4.1 Prevalence rates differences

The rate given in DSM-IV has been argued by many researchers as substantially underestimated. For example Rowland et al. (2001) examined a population-based sample of 362 children from 4 schools in grade 1 to 5. These children were screened using a teacher's behaviour rating scale and subsequently parents of the potential cases were interviewed. Rowland et al. found that 16% of this sample had ADHD. Barbaresi et al. (2002) using a large sample of 8548 children born between January 1 1976 and December 31 1982, investigated the prevalence of ADHD of the cohort (of mothers living in selected location/township). They defined the cases in 3 subgroups, namely definite, probable and questionable ADHD. From this population-based sample of children Barbaresi et al. found that 7.5% had definite ADHD and the percentage was 16% when the other two groups were included. Pineda et al. (1999) also used general school population to investigate ADHD. They classified the sample into 3 subgroups: 4-5 years old, 5-11 years old, and 12-17 years old. They found that ADHD/HI was the highest in the youngest group whereas ADHD/IA was the highest in children age 6-11 years old. Amongst the ADHD subtypes, ADHD/C was the lowest in all age subgroups.

3.4.1.1 ADHD prevalence in different countries

Benjasuwantep et al. (2002) investigated the prevalence rates of ADHD in Thailand. A total of 433 elementary school children were screened for ADHD using the Conners rating scales (Conners, 1997) followed by classroom observations and intellectual functioning test. They found 6.5 % of this population-based sample had ADHD. Studies carried out in India show that the prevalence rates were higher than in Thailand. Malhi and Singhi (2000) found 8.1% of their sample had ADHD. It was slightly lower than the figures produced in previous studies in the country which ranged from 10% to 20% (Bhatia et al., 1991; 1999). Nevertheless, Buitelaar (2002) suggested that 5% to 10% of the general population may have ADHD. The figure was

based on the findings of thirty studies on the epidemiology of ADHD reported by researchers in many parts of the world's population published in the period 1990 to 2000. Studies suggested the variation in ADHD prevalence rates resulted from many factors. It is believed that epidemiological data of ADHD in population is influenced by how, when and where the information is collected because the presence of the disorder is certified through/by the informants' reports.

Pineda et al. (1999) considered culture as one of the additional reasons for the difference of the prevalence rates outcome in their study on a random sample of 540 preschool and school children in Colombia. Even so, from the 30 studies analysed by Buitelaar (2002), the prevalence rates apparently varied widely between the studies. Variation in prevalence may also arise from the use of various assessment procedures and instruments used (11 questionnaire-based studies and 19 studies using diagnostic interview approaches in Buitelaar's review). Buitelaar argued the different estimates may also be explained by other reasons; the designs of the study such as only boys are included in some studies, or using a small sample size with large age range as well as different types of informants. For example the information collected in most of the questionnaire-based studies reviewed by Buitelaar utilised one source of information (teachers' reports) while in some studies that used diagnostic interviews, the information on the school situation was collected from parents. Hence, according to Buitelaar, the reliability of the information collected was unclear. Differences in assessment criteria and practices were also considered as contributing factors (Kewley, 1999) for example possible differences between North America and European countries.

Prevalence rates have been studied in combination with other aspects such as age, gender, psychosocial background, treatments and comorbidity within the samples. Studies have shown that more urban children have ADHD compared to in rural populations and are more likely children from low socio-economic status families (Szatmari et al., 1989). Brownell and Yogendran (2001) examined children diagnosed with ADHD or on prescribed stimulant medication or both from a population-based sample in the province of Manitoba. They found that different rates were associated

with professionals involved in the diagnoses e.g. between psychiatric and paediatric professionals.

3.4.2 The Prevalence of ADHD in preschool and young children population

Psychiatric and paediatric disorders frequently emerge in preschool years (Wilens et al., 2002). There are a number of studies focused on the prevalence rates of ADHD among very young children. A checklist directly based on the DSM-IV was assumed by some researchers as dependable in determining ADHD symptoms in children from this group (Pineda et al., 1999). Buitelaar (2002) suggested that ADHD is relatively lower among preschool children compared to children at older age. Wilens et al. (2002) investigated the clinical characteristics of children referred for clinical care from 1991 to 1999. In comparing ADHD with other disorders, they found that 80% of 200 youngsters aged equal or less than 6 years could be described as having ADHD.

ADHD is less diagnosed in certain countries. As Achenbach et al. (2003) pointed out, the different rates of ADHD may be explained as the studies used different methods or case definition. Hence the figures are not directly comparable. The changes in diagnostic criteria such as in DSM has also contributed to the diversity of prevalence rate of ADHD, for instance between the criteria in DSM-III-R and DSM-IV. Nevertheless some consistent findings have been identified; ADHD symptoms were more frequently in school-aged children, more in boys, and more cases appear to occur in children from low SES families. From an educational perspective, prevalence rates are important for planning preventive interventions and treatment programmes.

3.5 ASSESSMENT AND IDENTIFICATION OF ADHD

Children with special needs can be identified either incidentally or systematically. Information about the disorder in general population is collected by checklist completed by important informants and by structured interviews (Buitelaar, 2002). However, proper diagnosis is usually made based on systematic observation, assessment, and an analysis of the child's life history. These procedures involve the use of instruments, which are needed for screening and clinical assessment, as well as for evaluating treatment strategies. Some researchers produce instruments for the purpose

of their study, and others may adopt commercially available instruments with adaptations to allow for cultural differences.

Identification of ADHD is a complex task as there is no single psychological test which can diagnose the symptoms of ADHD nor a biological procedure to verify ADHD (like cancer or diabetes for example). Many possible factors such as biological, psychological, social and cultural, which interrelate to produce ADHD symptoms need to be considered in assessing ADHD (Cooper and Ideus, 1996). Hence, to achieve an accurate assessment is not a straightforward process. It involves many people: parents, teachers, psychologists and medical specialists.

"Assessment of ADHD has long been a contentious issue" (p. 532) (Gumpel et al., 1998). ADHD diagnosis depends on the detailed developmental history provided by adults (parents), results of careful observations in school, home or specific setting such as clinical/laboratory and teacher's report. There are many diagnostic aids used by professionals to diagnose ADHD including questionnaires, rating scales and computerised tests of attention and impulsiveness. Teacher information by questionnaires or rating scales was among the mostly used in studies of the epidemiology of ADHD in children and adolescents (Buitelaar, 2002; Walraich et al., 2003). To provide objective evidence, these instruments need to be interpreted relative to other diagnostic procedures, which complicate the process of diagnosing a person with ADHD. The validity of ADHD diagnosis becomes a controversial subject (Jensen and Edelbrock, 1999).

Factors such as childhood history and assessment for co-occurring disorders are another challenging issue in assessing ADHD. For example, self report used to establish childhood history of ADHD was found to be contradicted by parents' report in a study by Richards et al (1999) who suggested that parents' reports are more valid than the report by patients owing to exaggerating or underestimating their own childhood behaviour or forgetting the history.

Medical diagnosis of ADHD relies on information from parents and teachers in distinguishing behavioural symptoms of ADHD in children. Research has been

conducted with modern technological instruments to improve the accuracy of diagnostic procedures: for instance the used of an infrared tracking device to measure difficult-to-detect movements of children while they were engaged in a tough and boring attention test (Fisher, 2000). Some professionals use sophisticated electronic information such as EEG to sketch differences in the brain of individuals with ADHD while others used muscle testing or neuro-feedback but concern about ADHD assessment and diagnosis remains as one of the controversial issues in the subject (Waldman and Rhee, 2002)).

3.5.1 Assessment procedure and tools for ADHD

Appropriate procedures and tools are necessary for assessing ADHD. Developmental factors relating to the deficit that a child developed may contribute to ADHD presentation, which may cause a false positive diagnosis (Green and Chee, 1995). Green and Chee estimated over 90 % can be identified by a properly checked on history and the current conditions. They stressed that:

> "Those who present with pure inattention and subtle problems of learning are much more difficult to diagnose and with them the tests and pointers are of special value" (p 52)

3.5.1.1 Clinical evaluation of ADHD

Clinical evaluation of ADHD involves several processes in order to obtain comprehensive data on the child's behaviour in many settings. For example Marshall et al. (1997) used clinical diagnoses based on a multi-informant, and multi-modal procedure which included parent interviews and rating scales, teacher rating scales, student test results and self-reports as well as examiner observation during the psychometric test battery. A series of procedures is frequently used to collect information for a good clinical assessment. Goldstein (1994) proposed a five step process;

a) *History based on interview*; a narrative of the child's development, behaviour, family history, family relations and functioning. From these data, evaluation can be made whether the child potentially experiences ADHD, as well as

symptoms and consequences of externalising or internalising problems.

b) *History based on standardised questionnaires*: A well-developed and factor- analysed questionnaire used to provide organized reports of behaviour by at least two adults who regularly interact with the child. These data can essentially describe what the adults see and can supplement anecdotal history and observation.

c) *School data*; review of all assessment data such as report cards and results of group achievement tests to identify school performance.

d) *Generate hypotheses*; devise a number of hypotheses concerning the cause of the problems and test each of the hypotheses and rule out the coexisting problems.

e) *Evaluate the child*; using face-to-face assessment procedures to identify issues concerning the child's emotional status, self-esteem, cognitive development and possible learning disability. Other aspects which need to be observed are the child's interpersonal style, temperament and mindset.

There is no specific pattern of tests used consistently in ADHD studies that can evaluate an individual in a clinical setting that efficiently distinguishes individuals with ADHD from those with other conditions. However some studies using neuropsychological tests managed to distinguish children with ADHD from those with anxiety problems or affective problems (Willoughby et al., 2001).

3.5.1.2 Educational assessment of ADHD

A wide range of factors may contribute to problems and difficulties experienced by a child. Basically considerations of the pattern of behaviours displayed by the child in many settings over long periods are needed in assessing the possibilities of ADHD in a child. Psychologists or educators mainly evaluate individuals for possibilities of having ADHD based on real life indications from many sources. Cooper and Ideus, (1996) in discussing effective assessment stressed that;

> '...a precise, appropriate and correct diagnosis necessarily relies on the objective, systematic collection of both qualitative and quantitative

> information, from a variety of sources having direct knowledge of the pupil. No single evaluator (parent, teacher, physician, psychologist) possesses the array of information required to unilaterally diagnose.' (p. 21)

Some common procedures and instruments used in practice to identify ADHD include (without ranking of priority);

- *Observational measures of ADHD symptoms:* One of the most revealing ways of collecting information on ADHD symptoms is observation in natural settings of children's behaviours. To evaluate young children with ADHD is a complex task and may be done by many ways. Observational measures may disclose many aspects of children's ADHD-related behaviours such as impulsivity in answering questions, fidgeting while on particular tasks (e.g. boring vs. interesting task), conversation patterns, off-task (looking away) in response to noise or visual distraction, comments on external objects/noise in the room that are not related to the task at hand, and asking questions that shows they think about stopping the task (e.g. when the game will be over, or what is next).

Direct observational methods have been used primarily to gather confirmatory evidence to support the diagnosis based on a rating scale. This approach is also suitable for assessing situational and sequential or chronological variations as well as symptom manifestation in different activities and different times of the day. The ADHD Behaviour Coding System (ADHD-BCS) is one of the procedures that have been used in observing ADHD symptoms in clinic playrooms and classroom settings in schools (Barkley, 1991). Abikoff et al. (2002) used objective observational methodology to test their hypothesis on 502 children with ADHD to observe classroom behaviour norms in gender and comorbidity subgroups.

- *Structured interview*; Usually relevant information related to assessment and diagnosis of ADHD can be collected through structured interviews. Parent interviews and clinical interviews for parents, children as well as adolescents were developed to produce DSM diagnosis of all childhood disorders (Mckinney et al., 1993). The structured diagnostic interview has been widely used for clinical practice and research in child psychiatric assessment over the past two decades (Edelbrock et al. (1999). For

example Marshall et al. (1997) used the Structured Interview for Diagnostic Assessment of Children (SIDAC) to specify co-occurring childhood psychopathological disorders in ADHD participants. The advantage of the structured interviews is that investigators can specifically determine the structure, order and process of the interviews.

- *DSM symptoms checklist; Numerous* rating scales are available to quantify DSM diagnosis by collecting parent and teacher ratings of behavioural symptoms of ADHD. For example the ADHD Rating Scale (DuPaul et al., 1998) gathered parent and teacher ratings on the 14 symptoms of attention disorder as specified in DSM-III-R. With similar characteristics an updated version, the ADHD Rating Scale-IV (DuPaul et al., 1998), consists of ratings on the 18 items, and integrates essential features linked to DSM-IV diagnostic criteria for ADHD.

- *Other measures of primary characteristics*; Several instruments have been developed which are not specific to DSM criteria, but measure the primary features of ADHD. For instance, the Attention Deficit Disorder Evaluation Scale (ADDES) explores the three behavioural constructs of ADHD with a large item pool (McCarney, 1989). ADDES has both parent and teacher forms. Another instrument in this group is the Yale Children's Inventory (YCI), developed to screen for learning and intentional problems as perceived by parents (Shaywitz et al., 1986). In addition to attention, activity level and impulsivity, academic, fine motor, and language problems are measurable by the YCI.

- *Multifactor rating scales;* Rating scales are behaviour questionnaires based on the diagnostic criteria for a particular disorder (such as by DSM-IV) and incorporating scaled measures. Rating scales are widely used instruments to determine the presence of ADHD. There are many types of rating scales varying according to purpose and information required. However the general procedure used in the scales is similar where occurrence of certain behaviours is rated (Jones, 1991). Several rating scales are used to assess children's emotional and behavioural problems. These instruments were empirically derived with the factors that reflect features of ADHD, which also reflect other behaviours such as aggression, passivity,

and immaturity. The Child Behaviour Checklist (Achenbach, 1991) and Conners' Rating Scales (Conners, 1997) are among the popular rating scales used for ADHD. Both instruments are well normed in terms of socio-economic status and racial/ethnicity composition.

Conners' rating scales are widely used internationally. Their norms, reliability and validity were based a large normative sample giving them a very stable psychometric properties. The main use of the scales are for the assessment of ADHD (Conners, 1997) in various contexts, including screening measure, monitoring device for treatment, research instruments and diagnostic aid. The revised version of Connors rating scales contains 3 types of scale: parent (CPRS-R), teachers (CTRS-R) and self report (CASS). All 3 contain subscales that link to DSM-IV symptoms. CPRS-R and CTRS-R able to differentiate individuals with ADHD from non-clinical individuals and other clinical groups and these rating scales are suitable for reporting individuals of wide age range, 3 to 17 years. CASS is suitable for individuals age 12 to 17 years.

Each of the 3 scales has 2 versions: long and short version. The long version has been designed to assess a broad range of problem behaviours, contains subscales for comorbid problems. It takes more time to score but conveys more detail information than the short version. The components of the subscales are provided in the manual in a clear and user-friendly style. The CTRS-R short version contains 28 items representing four subscales namely oppositional (5 items), cognitive problems/Inattention (5 items), hyperactivity (7 items) and ADHD index (12 items). Reliability and validity of these scales has been widely tested. In addition as many researchers have used these instruments for data collection, the research results have contributed to the confirmation of their psychometric value.

The Conners' rating scales offer both categorical (differentiating ADHD and non-ADHD) and dimensional (the severity of the problems) scoring. They provide age- and sex-specific norms and subscales for major areas of possible coexisting disorders for ADHD cases. The scales have been translated into Spanish and French.

The CTRS-R and the ADHD Rating Scale-IV were amongst the standardised instruments used as major references in the process of developing the ADHD Checklist for the present study.

3.5.1.3 Assessment tools and procedures for young children

The specific scales discussed above may not be suitable for assessing young children because, either the tools require skills that beyond the child's developmental level or because the tools are not normed for the age group (Jones, 1991). However some instruments are widely used for assessing young children, including:

a) Teacher and parent rating scale are frequently used to screen children from community or school sample. For example Winsler et al. (2000); Winsler et al. (1999); Gadow and Nolan (2002); Walraich et al., (2003).

b) Structured interviews are used to gather information from parents. For example Campbell and Ewing (1990).

c) Observations may disclose many aspects of children's ADHD related behaviours as mentioned before.

3.6 ADHD TREATMENTS AND THERAPY

There are many treatment strategies available for ADHD. The main goals of treatments and therapies are to help the child with ADHD to be well adjusted to the demands of the social environment, particularly in school and at home. Stimulant medication treatment is one of the most popular ADHD treatments as well as one of the controversial issues. Other than psychopharmacological therapy, Anastopoulos et al. (1991) listed classroom behaviour therapy techniques, parent training in behaviour management skills, cognitive-behavioural training and the combination of those treatments as established effective treatments to reduce ADHD symptoms. Chan (2002), highlighted the complementary and alternative medicine (CAM) used in treating ADHD and listed the most commonly used as biochemical therapies, lifestyle/mind body therapies, biomechanical therapies, and bioenergetic therapies. Educational interventions, on the other hand mainly deal with appropriate provisions and classroom strategies to cater for educational needs. Many treatment models and therapies use a collaborative approach combining interventions of education, medical and psychological strategies.

3.6.1 Treatment by Medication

Medication is recognized as one of the most important treatments for ADHD (Cherland and Fitzpatrick, 1999). The purpose of medication is to reduce ADHD symptoms and to increase attention. Many types of central nervous system (CNS) stimulant drugs have been used in treating ADHD symptoms over the decades. Methylphenidate, Clodidine, Dextroamphitamine, Imipramine and Thioridazine are among the most commonly used with methylphenidate being the most popular (Rapley et al., 2002). Sometimes multiple stimulants are employed in simultaneous combinations. The general effect of this type of medication is believed to act at the neurochemical level in the brain regions that control attention, arousal and inhibitory processes by manipulating the neurological substrates thought to mediate the neuropsychological functions.

Stimulant drugs treatment is widely used to treat the symptoms of ADHD particularly in the USA (Rapley et al., 2002). However in certain countries such as the UK, this treatment is typically applied only when the child is in the extreme condition and other strategies have not worked (Kewley, 1999). The stimulant is conceptually used to eliminate symptoms of ADHD. The alteration of neurotransmitter activity in the frontostriatal region of the brain cause immediate impact on behavioural changes (Perring, 1997). Antidepression medications are another type of substances used to lessen ADHD symptoms (Anastopoulos et al., 1991). The substances such as tricyclic antidepressants (Imipramine, desipramine and amitryptilline) have been found to decrease restlessness, impulsivity and anxiety with a slight impact on increasing attention span (Green and Chee, 1995).

The combination of drugs has been used to provide better effect and control of ADHD symptoms. For example non-stimulant drug Clonidine is more likely to improve child's compliance ability when combined with a stimulant's effect on inattention and distractibility (Green and Chee, 1995). Rapley et al. (2002) identified a large variation in practice with 22 different medications used in 44 different combinations. The most frequent combination was methylphenidate and clonidine.

There is evidence of medication leading to increased children's attention span and persistence to respond to environmental events (Anastopoulos et al., 1991). For example, Schachar et al. (2002) reviewed 14 studies involving 1379 participants and found that there were positive effects of medication on overall symptoms (7 studies); dysfunctional social behaviours (6 studies); internalising symptoms (2 studies).

It is well established that medication can improve classroom manageability and student's time of on task in short term (Swanson et al., 1993). However, stimulant medication effects wear off after a period following medication and ADHD symptoms recur in individuals with ADHD. The long-term effects on medicated children's academic productivity and the adverse effect on learning of these children have been widely studied. Schachar et al. (2002) argued that the studies they reviewed provide little evidence for academic performance improvement by stimulant treatments (3 of the 14 studies). Equally, previous investigations on this issue did not provide convincing evidence (Swanson et al., 1998).

3.6.1.1 Teachers' role in medication treatment

Teachers have a significant role in medication treatments as they interact with the medicated child during the periods the medicine takes effect (Cooper and Ideus, 1996). They are in the position to observe objectively and report the effects of medication on a particular child. Hence, teachers' knowledge of medication and their participation are vital in successful medication treatment.

Extensive discussions on medication treatments are conveyed regarding various aspects. Issues concerning the effect, the suitability of medication treatment for young children, monitoring and long-term safety are among the unresolved questions (Connor, 2002). Although no major research proves that medical approaches always work on ADHD, the existing evidence advocates that medication is part of effective ways to help children with ADHD experience success in controlling the symptoms, but not all children get the same positive medication effects. Also, others are successfully treated by non-medication treatments (Kinder, 1999).

3.6.1.2 Issues on medication treatment of ADHD

These kinds of treatments have short-term and long-term effects as well as side effects. As a characteristic of drugs, stimulants can cause additive tolerance effect. Psychotic symptoms may occur as side effects of all stimulants medications (Cherland and Fitzpatrick, 1999). However the side effects of ADHD treatments found by many studies which occur in some children during or after a dose wears off, include change in appetite, irritability, tiredness, or nervousness, insomnia, skin rashes, palpitations, headaches, and changes in blood pressure (Breggin and Breggin, 1995; Perring, 1997; Kewley, 1999; Beck et al, 1999). Nevertheless, dosages and timing of dose adjustments are very individual and side effects may be confused with non-response or because of too low dose (Barkley, 1990). Some have argued that stimulant treatment may possibly lead to drug use or abuse later in adulthood. However Barkley et al. (2003) in their 13-year follow-up study of 147 clinic-referred children suggested that the treatment has no influence on the habit of using such drugs. In addition they believed that the severity of the conduct disorder may increase the risk of the habit among young adults with ADHD.

Although the value of medication in managing ADHD is recognised, concerns about the use of stimulants are growing. Proponents basically view ADHD as a specific mental disorder with a biochemical cause that can be managed by the 'medicinal' effects of stimulants but the opponents are concerned about the 'detrimental' effects of overmedication or improper procedures, especially the for young children (Perring, 1997). Many studies have been conducted to explore these issues. For example, a recent study found that lack of monitoring and guidance compromised the effectiveness of the treatments (Rapley et al. 2002). In the same spirit, Breggin and Breggin (1995) in order to support their argument that ADHD is more of a manifestation of conflict rather than a disorder, highlighted research findings which show that methylphenidate affects all children in the same way: all show changes after having taken a dose of psychostimulant. They also discussed positive and negative long-term effects as they found no concrete evidence that associated the improvement of a child's learning or academic performance with the use of stimulant treatment.

However, Connor (2002) suggested that stimulant therapy should be considered for young children who have not responded to other therapy or for those with severe ADHD symptoms, to avoid serious developmental problems, but it is not recommended for children younger than 3 years of age.

Scepticism regarding stimulant treatments is based on different points of view regarding efficacy and side effects. A further current issue concerns the relative powers and responsibilities of professionals. This has recently included prescription rights of psychologists. Resnick (2003) argues that psychologists should be permitted to prescribe medication and cites an ADHD case in support. Perring (1997) has highlighted the reasons for the resistance to the use of medication including issues of side effects, unnaturalness, profit motives, thought control, competitiveness, and doctors' power. In other words this type of criticism is not concern with the effect of stimulant and other medication per se. Rather, it addresses the socio-political questions of relative professional power which has traditionally resided with the medical profession whereas ADHD is seen as an issue which concern educational and psychological practitioners as well as medical practitioners.

3.6.2 Educational interventions for students with ADHD

There are some interventions commonly used and recommended for school settings, distinctive non-medical interventions used by teachers to increase children's attentive behaviour (e.g. behavioural strategies) or to deal with attention difficulties, such as by teaching better self-control or problem-solving strategies (compensatory strategies) for older children (Miranda et al., 2002). Psychosocial treatment and multi-modal treatment (MTA) are among the frequently used interventions in educational settings. All of the classroom interventions should be appropriate not only for children with ADHD but all children (Cooper and Ideus, 1996 ; Purdie et al. 2003). Purdie et al. argued on the basis of their meta-analysis that there was a lack of evidence that medical intervention alone had a significant effect on improving educational outcomes. They stressed that in promoting educational success for children with ADHD, strategies that directly address children's academic difficulties must be used. Hunter (2003) has also suggested school-based programmes and classroom

management techniques rather than individualistic approaches for disruptive behaviour disorders. These will provide intervention across the prevention spectrum so all students in a school can be targeted.

3.6.2.1 Psychosocial treatment for ADHD

Normal techniques that work well for many children may be ineffective for children with ADHD. Non-medical interventions are usually used by teachers to increase attentive behaviours or to deal with attention difficulties, for example behavioural strategies and compensatory strategies such as teaching better self control and problem solving strategies. Many types of psychosocial treatments for ADHD are used in educational settings and a few are discussed in this section.

a*) Contingency management (CM):* This intervention focuses on the teacher's skills in using various techniques to improve the classroom behaviours of children with ADHD (Miranda et al., 2002). Techniques including positive reinforcement, contingency contracting, reward, time-out and response cost are normally adopted in this type of intervention. CM has an impact in improving classroom behaviour of students with ADHD (Pelham et al, 2000) but maintenance after withdrawal of the treatment is not proven (DuPaul et al., 1997)

b) Cognitive – behavioural strategy (CBS): CBS involves several techniques in teaching individuals with ADHD to control their own behaviour, particularly to reduce hyperactive-impulsive and aggressive behaviour and to solve their own problems. For example cognitive modelling, self-reinforcement, self-monitoring, and self-instruction are used. From these approaches, children with ADHD learn to use the strategies in other situations as they are taught to identify and use a series of steps to solve problems. For example, Wehmeyer at al. (2003) explored the effect of a self-regulation process in three students with developmental disabilities in mainstream classroom. They found consistent improvement in all three students and more importantly, the students achieved more in targeted behaviours than was expected by their teachers.

CBS predictably has low impact on younger children as this problem solving-strategy is not age appropriate for this group. Research has found that CBS may help to improve the basic symptoms of ADHD but has not been found to improve individuals' school attainment (Miranda et al., 2002).

3.6.3 Combination treatments: Multi-modal treatment (MTA)

This model incorporates multiple perspectives to create a multi-modal intervention by adding psychosocial intervention to stimulant treatments. This model has been extensively studied by the National Institute of Mental Health (USA) (Jensen et al., 2002; Wells et al., 2000). Barkley (2000) considered the construction of the model as there was no explicit theory of ADHD used in its design. The design of the MTA, according to Barkley, involved assumptions made based on empirical literature which were claimed by the MTA cooperative group to provide a theoretical rationale.

Four major parts in MTA consisted of three psychosocial treatment and one based on medication;

a. Education about the disorder; to help to increase understanding of the precise nature of ADHD; changing the way people view child's behaviour (reduce misunderstanding and criticism)
b. Parent training in behavioural management (what to do and how to do)
c. Educational planning (to meet the special need)
d. Medication ; if necessary (plus occasional family counselling)

Many studies have been done to improve the model, for example Wells et al. (2000) examined the effectiveness of the model by comparing medication and psychosocial treatments and their combination. 579 children with ADHD aged 7-10 years were involved in their study. These children were divided into subgroups; one group received psychosocial treatment alone while the other group were given combined treatments. Wells et al suggested that the combination treatment produced better outcomes but conceptual and logistical issues need to be addressed cautiously.

3.6.4 Diet Treatment

Dietary intervention is a complex treatment based on the'Feingold hypothesis' which proposed that food additives and certain fruits/vegetables were responsible for the hyperactivity in some children. The key elements in this treatment are avoiding allergenic food (such as coloured food) or identified food product (such as certain fruits and nuts), and increase intake of foods for nutritional supplements (with high vitamins and minerals). Specific dietary strategies are designed with a diary outlining all the food in the diet and specific foods to be omitted. Feingold (1975) divided foods to be avoided for diet treatment in two groups: those with 'artificial flavour/colours' and 'natural salicylates'.

The benefit of diet treatment was not broadly recognised because the studies carried out to investigate ADHD in relation to diet had been done with weaknesses in the design and conduct such as failure to use adequate control group or inadequate dosage levels of colouring (Rimland, 1983), hence the findings did not provide convincing evidence for diet intervention. The opponents claimed that this treatment may be too time consuming and expensive, and the restrictions may cause deficiencies in specific nutrients. Furthermore, the entire family need to adhere to the diet and keep away the ruled out food.

Diet intervention is a natural treatment when children can selectively choose suitable and nutritious foods on their own will. However, in reality it is not easy to restrict children from food additives as in school or in other places (outside home) they are exposed to peers' influence.

3.6.5 Complementary and alternative medicine (CAM)

There are many types of CAM therapies and for ADHD, biochemical and lifestyle/mind body group are commonly used (Chan 2002). Some parents may use CAM interventions to avoid or decrease stimulant medication. Bussing et al. (2002) through telephoned screening interviews of 1615 parents found 822 had children with ADHD symptoms (diagnosed ADHD, ADHD was suspected, or those about whose emotions or behaviours parents/school staffs had general concerns). Bussing et al.

found that some of these parents of children having ADHD symptoms used CAM for treatment and this was significantly higher among children who had received a diagnosis of ADHD (12 %) compared to suspected ADHD (7 %) and the other group (3%). It was also found in the same study that 4 % of these parents had used faith healing in treating ADHD symptoms.

Chan et al. (2003) surveyed the use of CAM therapies for ADHD and found that expressive therapies, vitamins, and dietary manipulation were commonly used and more than half of the sample (114 parents of children with ADHD) reported using these therapies because it was a natural therapy. According to Chan et al., only 11 percent of the parents discussed using CAM treatment with their child's physician.

3.6.5.1 Biochemical therapies

Medications, herbal remedies, vitamins and nutritional supplements are among the most commonly used. Chan (2002) argued that these therapies must be used with caution because the consistency, purity, potency, and safety of these therapies vary among the manufactures. Furthermore contamination may occur during the manufacturing process.

3.6.5.2 Lifestyle/mind body therapies

The key principle for this category of therapies is that thoughts or emotions have an important impact on health. By manipulating the mind's ability to influence body function and ADHD symptoms these therapies incorporate activities in daily life, including exercise, nutrition, environmental changes, and mind-body techniques such as hypnosis, psychotherapy, biofeedback (Chan, 2002). According to Chan, families of young children with ADHD were often attracted to CAM therapies and Chan suggested that clinicians should review the promoted materials with parents.

3.6.6 Conclusion

This review indicates that the treatment for children with ADHD is varied and that the aim of any particular treatment may be to improve the functioning of children with ADHD behaviourally, cognitively, and/or socially. This review of the literature shows

the heterogeneity of measures and outcomes on ADHD treatments. Meta-analysis reports of interventions have shown a variety of effect sizes for different types of intervention. For example, Purdie et al. (2003) examined the types of intervention which work best for children with ADHD with respect to their educational progress. They reviewed the findings of the studies that took place from 1990 to 1998. By using the four key terms "ADHD, ADD, attention deficit disorder and attention deficit hyperactivity disorder" Purdie et al. (2003) found 74 studies; 68 articles and six theses met the criteria they set. From the analysis they ascertained various types of treatments in those studies and grouped them under five major clusters; pharmacological (51), school-based psychological/educational (5), non-school-based psychological (10), parent training (4), and multi-modal (4). They found that the larger effects of various interventions concerned behavioural rather than educational outcomes. They suggested that medical treatments could have a major impact on students' behaviours but less evidence to support the flow-over effect from behaviour improvement to enhanced educational outcomes. They also suggested that in terms of educational outcomes the greater effect was from educational interventions per se. The scenario of ADHD treatment in the last decade as described by Purdie et al. is still relevant as the review of the recent studies shows that pharmacological intervention is more popular than nonpharmocological (Schachar et al., 2002) or Complementary and alternative medicine (CAM). Nevertheless, many believe and use a combination of these therapies. Some claim that the combination of medication and psychosocial interventions is the best treatment for ADHD. The impacts of the combination treatment have been investigated mostly from the samples representing ADHD/C and less is known about the outcome of the same treatments to other subtypes. Other factors may also influence the outcome of the intervention including teachers' awareness and knowledge about medication treatments.

3.7 THE THEORY OF ADHD

Many theories have been produced to explain the cause/causes and the nature of ADHD. Biological and environmental factors are both assumed as causative factors of ADHD. The enquiry has been based on the question whether ADHD is an inborn or a social phenomenon with psychological consequences. In terms of a biological basis

for ADHD, genetics, environment and a mixture of both are believed to account for the disorder. The interaction between genetic and environment factors is still not thoroughly understood and remains under scientific study (Wender, 2000; Waldman and Rhee, 2002).

3.7.1 Research on the aetiology of ADHD

The findings of studies on the cause of ADHD are not unitary. Many likely contributory factors have been found to be related to ADHD. One line of research is based on theories which propose genetic and non-genetic factors playing a role in ADHD. For example Waldman and Rhee, (2002) in discussing genetics and environmental influences on ADHD reviewed the research related to family studies, adoption studies and twin studies and they found that a wide range of differences of many important characteristics were used in each set of studies. They concluded that ADHD is largely heritable whereas little evidence of shared environmental influence was established. Abnormal brain development, neurochemical abnormalities, exposure to environmental toxins and practices during upbringing have been argued to be associated with the cause of ADHD (Waldman and Rhee, 2002). Some researchers consider ADHD inattentive subtype and combined subtype as different disorders and speculate that they have a different aetiology (Barkley, 1997b; Wheeler and Carlson, 2001). In general, genetic/biogenic and environmental reasons occur in most theories of ADHD aetiology.

3.7.2 Biological and environmental theories

3.7.2.1 Biological theories

a) *Head injuries theory*: The 'head injuries' theory was one of the earliest theory focused on biological factors. The theory assumed that ADHD-like behaviours were due to minor head injuries or undetectable damage to the brain especially at birth which causes the attention disorder and learning disabilities. This theory led to the term 'minimal brain dysfunction' (see also in 3.1) used in diagnosis of the disorder as some children with ADHD symptoms had effectively normal brain with some subtle malfunction (Sandberg and Barton, 2002). The outstanding research on the nature of

hyperactivity and its treatments had been carried out based on this hypothesis with a focus on neurological differences (Green and Chee, 1995). Consequently more research literature is available on hyperactivity in relation to children's brain functioning as many authors provide an explanation of several different outcomes which have led to later theories.

Later theories have focused on aspects related to neurochemical, neuroanatomical and genetic features. Scientific research including molecular genetic studies have been undertaken to examine the theories (Sandberg and Barton, 2002; Reason, 1999). These studies examined the size, structure and the chemistry of the brain of children with ADHD.

b) Neuroanatomical aspect: Hypotheses based on brain anatomy for the cause of hyperactivity propose that ADHD symptoms are caused by hypofunctioning of certain parts of the brain. This dysfunction is assumed to occur within the thalamus (where the cells relay information regarding the initiation of movement between basal ganglia and motor cortex (Reason, 1999; Castellanos and Swanson, 2002). Studies of individuals with ADHD using magnetic resonance imaging (MRI) have found reduced volume of brain regions where abnormalities were found ('white' and 'grey' matter were smaller) in individuals with ADHD. The morphological differences have been studied and the hypotheses drawn are based on scientific evidence produced by cerebral blood flow, positron emission studies and MRI (Riccio et al, 1993). Riccio et al reviewed the models of neuroanatomical perspectives on ADHD by describing the nature of brain dysfunction, associated to ADHD behaviours. Research findings based on the blood flow on the brain regions with regards to metabolic activity, were scrutinised by Riccio et al. These studies produced conflicting results and so no definite conclusion could be drawn.

c) Neurochemical approach: Another hypothesis links the dopamine biochemical abnormalities to the neuroanatomy of the brain; this hypothesis is based on the animal model of hyperactivity, on biochemical as well as on clinical pharmacological studies. The central concern of this model is dopaminergic dysfunction in the nervous system (Sandberg and Barton, 2002). The dopamine theory of ADHD proposes that ADHD

symptoms (such as memory deficits and overarousal) are due to malfunction of neurotransmitters in key areas of the brain that are responsible in organising thought because of lack of this important chemical dopamine (Castellanos and Swanson, 2002).

d) Genetic: The genetic hypothesis suggests heritability and genetic influences play important roles in ADHD cases. The assumption that genetic factors may contribute to ADHD has been based on family studies, and adoption studies which show that ADHD has a propensity to occur in families. For example twin studies have suggested that receptor gene activities are reduced by genetic polymorphisms and alter normal development of dopamine systems (Swanson et al., 1998).

3.7.2.2 Environmental theories

a) *Dietary theories*: Some foods are believed to activate hyperactive behaviours. 'Theories of refined sugar and food additives' were proposed to explain behavioural and learning abnormalities particularly hyperactivity. For example, one theory suggested that children's hyperactivity and inattentiveness is cause by refined sugar and food additives (Feingold, 1975; Green and Chee, 1995; Kinder, 1999). In the 1980s, this theory was dominant, and research was carried out that focused on diet treatment for ADHD. The theory hypothesized that substances such as sugar, and aromatic substances were responsible for ADHD symptoms (Sandberg and Barton, 2002). Other substances such as colouring, flavouring, preservatives, chocolate, and chemicals in the environments were also linked to ADHD behaviours. Nevertheless due to lack of evidence-based outcomes, fewer researchers favour these theories. Some claimed that only a few children were treated effectively particularly those with food allergies but proponents for example Kinder (1999), claimed that 60 to 70 percent of children with ADHD will respond to dietary intervention.

b) Psychosocial related theory: Family and environmental factors are associated with childhood problems (Richman et al., 1982; Mc Gee et al., 1984). Disorganised home life or school environments can contribute to behaviour problems. Some signs may overlap with ADHD symptoms. Ineffective parenting style was used as a

parameter to study the behaviours of situational hyperactivity (Sandberg, 2002). Nylund (2000) in his five-steps 'SMART approach', for example strongly believed that ADHD symptoms may be treated by behavioural methods (see also 3.7.4).

c) *Environmental theories:* Other factors proposed as the cause of the ADHD symptoms were associated with brain injury cause by agents in the environment such as trauma, disease, fatal exposure to toxins (high level of lead in early childhood), developmental impairments, injury, maternal use of alcohol and tobacco during pregnancy (Tannock and Martinussen, 2001).

Many of these theories have not been supported by any conclusive evidence as a causative factors of ADHD (Goodyear and Hynd, 1992). Nevertheless, the impact of the environment on children with ADHD is believed to be crucial particularly in the educational domain (McEwan, 1998). A novel theory has emerged to associate neurobiochemical factors with behavioural aspects in explaining ADHD, and the following section discusses the dynamic developmental theory of ADHD.

3.7.3 Behavioural theory: dynamic developmental theory of ADHD

This is a neurobiological theory of ADHD. It is based on the prediction that ADHD symptoms are dynamically modified by reinforcement and extinction processes and their interaction with the environment (Taylor et al., 1998). This theory only caters for ADHD predominantly hyperactive/impulsive and combined subtypes. The argument for this theory leads to the view that ADHD/IA subtype may have heterogeneous origins and is qualitatively dissimilar from ADHD/HI or ADHD/C.

This theory suggests that the development and severity of ADHD symptoms are probably linked to the degree of dysfunction in numerous dopaminergic systems (hypofunctioning dopamine system). It is assumed that there might be two independent factors that mainly underlie the cause of ADHD; namely, altered reinforcement processes and deficient extinction of previously reinforced behaviour. These factors interact with the deficiency of the system and cause the impairment in starting and stopping responses, in acquisition, retrieval and relearning of sequential

tasks, and poor nondeclarative learning habit (Johansen et al., 2002; Sagvolden, et al., 2002).

3.7.4 Cognitive theory: Self-control Theory

Some cognitive theories appear to show potential evidence for ADHD aetiology, for example, Self-control theory. The theory of self-control, by Barkley (1997b), assumes that the main underlying component of ADHD is a difficulty with behavioural inhibition. The argument is that the fundamental deficit in ADHD is of self-control. Since behavioural inhibition is a core impairment in ADHD, attention problems are secondary and not universal characteristics. This theory, as in the case of dynamic developmental theory of ADHD, only caters for ADHD predominantly hyperactive/impulsive and combined subtypes with the clear view that ADHD/IA subtype may originally differ from ADHD/HI or ADHD/C.

According to Barkley, during the developmental period, internal rules and standards will gradually take charge of an individual's behaviour when they learn to inhibit their behaviour, which is initially strongly influenced by the immediate surrounding/external environment (young children require external consequences to guide and direct their behaviour). In other words, this theory is based on the argument that primary deficits in self-regulation cause impairment in the development of psychological processes and functions. The deficit in self-control causes an individual impairment in the following areas:

a) Diminishes the ability to recall past events and to use memory for predicting future events, which impairs effective dealing with daily life situations.

b) Late or incomplete development of ability to use internal speech to guide behaviour or action. This internalisation of speech is important in generating a guide about what to do or how to solve problems.

c) Impairment in psychological sense of time. This impairment prevents individuals with ADHD from modifying their behaviour in responding to real situations and keeping track of time needed for and devoted to a particular task.

d) Difficulties in establishing a goal and using its internal image to guide actions. People with ADHD are less able to hold to long-term goals or to persist toward the attainment of important goals.

These secondary deficits of executive functions (Barkley, 1997a) make individuals with ADHD unable to deal with daily situations (not able to recall past events and manipulate them in predicting the future), to put knowledge into practice or to follow rules or keep track of time (so that they can alter behaviour related to time demands).

As mentioned above, by his theory, Barkley suggested that ADHD inattentive type and hyperactivity/impulsivity type are different disorders (Barkley, 1997b). Individuals with ADHD/HI or ADHDC have different core deficits for the disorder. Individuals with ADHD fail to standardise their self-regulation due to biological reasons and not because of parenting or upbringing factors. The theory that individuals with ADHD have deficits in executive functions has been empirically studied primarily in laboratory settings (where a child's behaviour can more precisely be controlled) and by fewer studies undertaken in real-life contexts (for example by Lawrance, et al., 2002).

Many convincing arguments have been proposed in advocating as well as confronting the idea hyperactivity as a disorder of self-regulation. For example many researches have been carried out based on this theory such as that by Lawrance et al. (2002) who explored executive functions of boys with ADHD outside the laboratory setting. They found that cognitive difficulties in ADHD may depend on the context and not all aspects of behavioural inhibitions can be associated with ADHD. Nylund (2000) in a book based on his experience was strongly opposed to medication treatment as he is in opposition to the notion that ADHD is a biological disorder (as viewed by Barkley and those supported biological root for ADHD). Nylund argued that research findings, which led to the hypothesis, were not successfully replicated to produce the same results. He stressed that

> "..... even if biochemical do exist in the "ADHD brain" their cause is unclear. ....., researchers should be more interested in exploring the interaction of different kind of brain responses to stress, parenting style, classroom structure, teaching style, and other contextual influences

rather than searching for the "ADHD brain"" (p. 22)

Most theories about ADHD based on studies carried out with children with ADHD have concerned combined subtypes and fewer have been done to explore children with inattentive type. Consequently little is known about the aetiology of this subtype. Nevertheless, a few studies have been carried out which include this subtype for example Chhabildas, et al. (2001) compared a sample of 114 children who met the criteria for ADHD/IA (67), ADHD/HI (14) and ADHD/C (33), with 82 children without ADHD. They found that ADHD/IA and ADHD/C had similar profiles of impairments to learning whereas ADHD/HI were not impaired.

However, despite a considerable amount of research, the precise aetiology of ADHD is still unidentified (Marks et al., 1999; Chhabildas et al., 2001) and as time goes on new research findings may lead scholars to challenge the present concept of ADHD. There are also many ongoing debates on ADHD in many aspects. Because there are no laboratory or radiological (e.g. X-ray) tests that can confirm the ADHD (as other biological defects such as hypertension could be proven by such technology) the belief that there are different causative factors that may be associated with ADHD-type behaviours has been and is growing. The variation in diagnosis results due to behavioural criteria has also become a controversial subject. Many researches have been carried out to address these contentious issues. For example the biopsychosocial model of ADHD (Neven et al., 2002) was generated to explain the complex interaction between biological, psychological and emotional experience that set the basis for a child's development. In addition, many important questions remain to be answered from issues such as the complexity of comorbidity in ADHD (Volkmar, 2003)

3.8 AGE

ADHD is established as one of developmental psychiatric disorders diagnosed in childhood (Pineda et al., 1999; Bedard et al., 2003). Some believe that most of the affected youngsters may outgrow the problems prior to adolescence and adulthood. However the evidence from longitudinal researches suggests that ADHD often persists into adulthood (Weiss et al., 1999). Children with ADHD are at risk of suffering the

disability cause by the symptoms throughout their life cycle as 30% to 50% of them continue to have some of the symptoms in adulthood (Barkley, 1996; Wender. 2000).

3.8.1 Age influence on ADHD symptoms

The influence of age is verified through studies that examined the prevalence of ADHD at different ages. The findings show the frequency of ADHD symptoms and the prevalence rates have been inconsistent between studies (Buitelaar, 2002). The level of inconsistencies across the studies has been noteworthy, for example Keck, et al. (1998) proposed that the components of ADHD recovery processes may be explained by the distinction between different types of remission (syndromatic remission, symptomatic remission, and functional remission). However based on that suggestion, Biederman et al. (2000) assessed 128 boys with ADHD by observation five times over a four years follow-up study and found that age was significantly associated with reduction of total ADHD symptoms and symptoms of ADHD core features, that is the symptoms reduced as the children became older. Others reported similar findings for example, August et al. (1998) investigated the diagnostic stability in children of school-based samples of grade 1 to grade 4 over a five-year period. They suggested that although 69% of these children still met the ADHD criteria at year 5, in general both inattention and hyperactivity/impulsivity features declined as their age increased (from year 1 to year 4) but hyperactivity/impulsivity declined more significantly. Other studies on the prevalence of ADHD also suggest that persistence of ADHD characteristics in adolescents and adults decline with age (Buitelaar, 2002).

3.8.2 Age and ADHD subtypes

The essential influence of age on the subtypes of ADHD has been reported by research findings. Though there is variation between them, the findings of studies between 1990 to 2000 shows that children at younger age (4-11 years) are more likely predominated by ADHD/HI and older children more frequently have ADHD/IA (Buitelaar, 2002). Nolan et al. (2001) also found that ADHD/HI was less common in teenagers (Nolan et al., 2001) whereas ADHD/AI was less common in preschool age

children. The above findings are in line with the previous findings by August et al. (1998). They investigated school-based samples of children in grades 1 to 4 by carrying out screening for disruptive behaviours (ADHD symptoms and internalising/externalising) over a 5 year period and found that ADHD symptoms declined from year 1 to year 4 but hyperactivity was more significant in the declination. They also found that 69 % of the children were still met the ADHD criteria at year 5.

In general, the pattern of the signs or symptoms of ADHD varies at different ages:

a. Young children (before age 7): Common behaviours of young children who are later diagnosed as having ADHD, as typically reported by parents, include an intense reaction to stimulation; a high activity level (hard to sit still and being constantly in motion); being persistent and demanding; unable to play with a toy or do one activity for a long period of time; inattention, low capacity to adjust to change and negativity; sharing, waiting or taking turn is not likely easy; poor sleeping and eating habits; and disobedience (Fowler, 2002).

b. Elementary or primary years (7 to 11 years); In the formal school setting children are required to listen, cooperate, organise, follow directions, and pay attention. Common problems encountered by children with ADHD in classrooms are being easily distracted and not able to finish assignments; squirming in seat, fidgeting or wandering around the classroom; talking at inappropriate times and blurting out answers to questions; being disorganised and losing things; and socially immature and with a few friends. These ADHD symptoms are more frequent and obvious in children of this age group (Pineda et al., 1999; Brownell and Yogendran, 2001). The difficulties caused by the symptoms may interfere with learning and academic achievement and may continue to appear at home such as taking excessive time to complete homework.

Buitelaar (2002) pointed out that the higher prevalence rates (close to 10%) were mostly found in age range between 6 and 11 years. According to Barkley (1997b), children with ADHD who were not treated are likely to show signs of behaviour

problems such as lying and petty stealing as well as symptoms of conduct disorder.

c. Teenage years (12-18): In many cases, despite their normal sensory abilities and intellectual capacity, some children do not outgrow ADHD and if the symptoms are not identified, these children may not get special educational assistance. This affects their learning process and their future. Barkley (1997b) suggested that teens with ADHD are three times more likely to have failed, been suspended or expelled from school compared to those without ADHD. However a recent study found that greater risk of cocaine abuse by young adults with ADHD was primarily mediated by the presence of comorbid disorder (Barkley et al., 2003).

d. Adults : Murphy and Schachar (2000), have reported that 30 to 70 percent of individuals with ADHD did not outgrow ADHD and, if the disorder persists into adulthood, the consequences are serious. Minde et al. (2003) have found that family and marital functions can be impaired in ADHD families.

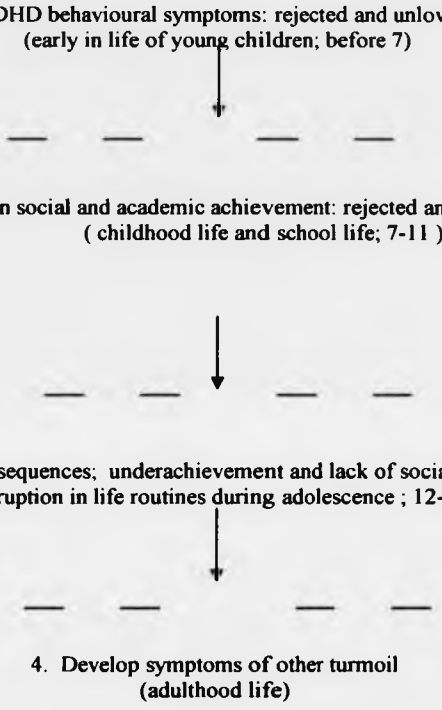
Assessing ADHD in adults is a contentious issue because the criteria for the disorder must be met not only for the current but also the childhood clinical symptoms. The information needs to be collected from many sources such as parents, employers, clinicians, and from the recollections of childhood symptoms in self-reports and other retrospective information (Murphy and Schachar, 2000). As revealed in section 3.4, in terms of accuracy and practicality, it is not easy to obtain all the information needed for a new diagnosis of ADHD in adults. Nevertheless, the symptoms of ADHD in adults can be explored by a detailed account, as they are able to articulate their inner life (Wender, 2000). Wender stressed that "ADHD does not develop in adults who did not have it in childhood" (pp 160) (since the criteria set for ADHD required early onset), but the core features of ADHD in childhood do not necessarily appear the same in adulthood. Seven major symptom groups based on the "Utah diagnostic criteria" (which were devised to describe symptoms for ADHD in adults) were listed by Wender as: attentional difficulties; persistent hyperactivity; mood instability; disorganization, inability to complete task; hot temper, explosive short-lived outburst; emotional

overreactivity; and impulsivity.

Although it is clear that ADHD can cause problems in individuals' lives the nature of the problems are distinctively different as the sufferers grow older because the impacts of ADHD and the needs are different at different ages. Hence age is one important variable concerning ADHD research and the link between primary and the secondary symptoms, with respect to help and support they need or receive which may change the situation. Based on the above argument, the age variable is applied as one control variable in the present study.

Children with ADHD have perceptions about themselves and, like other normal children, those with ADHD develop self esteem on the basis of others' responses. Due to behavioural problems caused by ADHD, they become rejected by peers, highly reactive to critics or teasing, feeling unlovable as parents like their siblings better, or feeling unworthy as they fail in most important areas of childhood life. These factors tend to make them have low opinion of themselves (Wender, 2000). If they do not get proper help and provision, consequently they will perform below their ability or capacity in terms of academic and social performance (Cooper and Ideus, 1996). This condition will further impair their functional abilities as they fail and became frustrated in many aspects of life (Frank, 1999). When ADHD symptoms significantly persist in adolescence, psychological changes will interact with ADHD problems and this will eventually increase the pain of peer rejection (due to lack of social and interpersonal skills). These circumstances may lead to other severe problems such as substance abuse (Wender, 2000; Weiss et al., 1999), and such problems may put the individuals at greater risk of arrest and imprisonments the adulthood (Curran and Fitzgerald, 1999). Curran and Fitzgerald examined the rate of ADHD among male prisoners population and found that 9.1 % of their sample of 55 prisoners (aged 20 to 30) met the criteria for ADHD. Figure 3.1 presents the link between primary and secondary symptoms of ADHD and its impact on an individual's life at different age levels.

Figure 3.1: Link between primary and secondary symptoms of ADHD and its impact in individual's life from childhood to later age in life



3.9 GENDER AND COMORBIDITY

3.9.1 Gender

Gender differences in individuals with ADHD have been widely studied and males are more often reported having ADHD than females (Blachman and Hinshaw, 2002; Diller, 2002) and all research findings on prevalence rates have identified more boys with ADHD than girls (Buitelaar, 2002). A range of male-to-female ratios has been produced based on different target populations but the ratio estimated by the APA (1994) is 4:1. However, some researches have proposed that ADHD is underdiagnosed in females and overdiagnosed in males (Heptinstall and Taylor, 2002), hence, this ratio is indicative and contentious to some extent. For example Pineda et al. (1999) argued that the ratio of the males was significantly higher for

ADHD/C cases only but not the other two subtypes. They also failed to confirm the assumed ratio, as their ratio was around 1.5 : 1 which is much lower than usually accepted. Also, contrary to typical findings, Benjasuwantep et al. (2002) found the ratio of boys were slightly less than girls (1: 1.09) in a Bangkok sample.

Nevertheless, Biederman et al. (2002), on the basis of their findings listed the possible reasons for the most commonly reported higher male-to-female ratios as:

a). Disruptive behaviour disorders were less prevalent in girls which may lead to underidentification and underreferral of girls with ADHD because behaviour problems and aggression are frequently used as a base for clinical reference (females exhibit less aggressive behaviours than males).

b). Girls with ADHD were twice as likely as boys to manifest ADHD/IA in which symptoms are more concealed than in hyperactivity/impulsivity.

c). Girls with ADHD have lower rates of learning disabilities than boys with ADHD and this decreases the possibilities for identification because normally parents or teachers ask for help when there are academic achievement problems.

3.9.1.1 Studies on females with ADHD

There are fewer studies focused on female participants compared to males. Unevenness in male-female ratio in some studies on issues related to gender was obvious. For example Dalsgraard (2002) in a longitudinal study of 183 boys compared to 25 girls, studied mental status of adults with ADHD. It is a 10- to 30-year follow-up of referred children (because of inattention and hyperactivity) who had been treated with pharmacological treatments in the period of 1969-1989. Dalsgraard found that females with ADHD had a higher risk of psychiatric illness in adulthood.

Kato et al. (2001) explored the presence of ADHD in 75 female participants between 4 to 19 years of age. They found that older females were more likely to be identified with depressive disorder and the study's findings advocate the need for modification of diagnostic approaches for females to suit appropriate age-based criteria. Blachman and Hinshaw (2002) examined the pattern of friendships of girls with ADHD age 6 to

12 years and concluded that the patterns were different in girls with different ADHD subtypes but generally girls with ADHD had fewer friends and were more likely to have no friends. Hinshaw (2002) investigated 140 girls with ADHD aged 6 to 12 and found that these children had dysfunction in externalising/internalising behaviour, cognitive, academic performance, peer status as well as comorbidity. Girls with ADHD/IA were found to be more isolated but less rejected compared to girls with ADHD/C.

There are many assumptions to how people perceive ADHD and react to the symptoms of ADHD concerning to gender. The higher proportion of ADHD in boys than in girls reflects many implications in practice as well as research; fewer studies focused on girls and the serious gap in knowledge about girls with ADHD is obvious. Cultural biases may contribute to research findings as in the case of Benjasuwantep et al. (2002). Nevertheless girls with ADHD need support and services as their male counterparts do.

3.9.2 Comorbidity

The nature of ADHD often causes a developing learner to underachieve at school for their level of intellectual abilities. Hence, there are conditions that overlap the symptoms of ADHD with implications for differential diagnosis. For example children with cognitive disabilities (mental retardation) learn slowly and some may be overly active or impulsive whereas in children with ADHD, once their attention is captured, they are able to learn normally.

3.9.2.1 ADHD and accompanying disorders

Clinical differential for ADHD is frequently to distinguish it from age appropriate behaviour particularly in young children. However there are some common disorders of which the symptoms may mimic those of ADHD. Table 3.5 present the differential characteristics of some of the common disorders that are comorbid with ADHD.

Table 3.5: Differential characteristic between ADHD and other disorders as described in the literature•

ADHD and other disorders	Differences in characteristics and overlapping symptom/symptoms
ADHD and Cognitive disabilities	**Cognitive disabilities**; learn slowly and some overly active or impulsive. **ADHD:** Once their attention is captured, children with ADHD are able to learn normally **Overlapping symptom:** Impairment in academic and social/interpersonal skills
ADHD and LD	**LD:** difficulties in listening, speaking reading, reasoning and arithmetic. **ADHD:** Severe academic underachievement when ADHD comorbid with LD **Overlapping symptoms:** Poor academic achievement and school behaviour.
ADHD and PDD (Autistic)	**PDD**: characterised by severe and pervasive impairment in several areas of development; social interaction skills, communication skills, the presence of stereotyped behaviour, interest and activities. **ADHD:** Children with ADHD communicate normally (ADHD is specifically excluded as a diagnosis if the PDD's symptoms are present) **Overlapping symptoms:** Limited social skills and poor academic performance
ADHD and ODD/CD	**ODD**: Essential feature; symptoms all reflect aversive behaviours (very little to do with symptoms of ADHD. **CD**: 4 indicative behaviours: *Aggressive* (harms or threatens to harm others); *Non-aggressive* (vandalism; causes property damage or loss); *Dishonesty* (theft); *Violation of rules* (truancy) **ADHD**: severe problems when ADHD is comorbid with ODD or/and CD. Children in ADHD/C group are more likely to have these two comorbid problems compare to other subtypes. **Overlapping symptoms:** Refusal to complete academic tasks
ADHD and Major depression (MD)	**Major depression:** sleep disturbance, fatigue change in appetite and thought of death **ADHD**: MD may occur as secondary symptoms. **Overlapping symptoms:** Inattention, psychomotor agitation
ADHD and RD	**RD:** language-based disorder related to poor phonological and linguistic processing. **ADHD:** Having ADHD and RD produces additional difficulties and impairments. **Overlapping symptoms:** Poor academic performance
ADHD and Dyslexia	**Dyslexia:** symptoms related to problems in decoding of words and problems in spelling **ADHD:** persistent behavioural abnormalities; inappropriate developmentally **Overlapping symptoms:** Poor academic performance

• Descriptions are based on (Eiraldi et al., 1997; Knivsberg et al., 1999; Rucklidge and Tannock , 2002). Note; Key for the abbreviation in the above table.

LD = Learning disabilities CD = Conduct disorder

PDD = Pervasive developmental disorder (Autism) RD = Reading difficulties

ODD =.Oppositional Deviant Disorder

Conners (1997) has suggested that comorbidity is common in ADHD cases. Kadesjo

and Gilberg (2001) investigated 409 seven-year-old pupils of Swedish general population. They found that most ADHD cases were having comorbidities and concluded that 'pure' ADHD is rare. They also argued that many studies of ADHD which claimed to have used pure ADHD samples may have been missed several comorbidities because they not have specifically screened

3.9.2.2 Associated characteristics

The review by Gresham et al. (1998) indicated that children with ADHD coupled with CD are at greater risk for developing a life long pattern of antisocial behaviour than children with ADHD or CD alone. Hence, when more than one unrelated condition or disorder occur simultaneously a child tends to experience more severe disability than those with only one disorder.

3.10 PRESCHOOL CHILDREN WITH ADHD AND CLASSROOM BEHAVIOUR PROBLEMS

School-related problems such as inability to complete work or to follow directions are secondary to ADHD symptoms. These problems if not treated appropriately may lead to severe emotional and developmental progress (Daniel and Cooper, 1999)

3.10.1 Preschool Children with ADHD

During the early childhood stage of education, peers and teachers play an important role and their influences are great enough to affect a young child in developing motivation towards learning as well as sense of self (Stanulis and Manning, 2002). Significant development takes place during the preschool years particularly in children's ability to monitor, plan and control their attention to accomplish situational goals. Young children with ADHD, however frequently show a different configuration of developmental pathways compared to their normal peers. Their educational needs are diverse as ADHD is not a single problem (Pfiffner, 1996).

3.10.2 Classroom Behaviour problems

Children with ADHD behave differently from what is expected of children of their age and background. A general impression of the ADHD child is that of highly

distractible behaviour (Douglas, 1983). However ADHD characteristics may overlap with the symptoms of other disorders and this situation makes the diagnostic process more difficult and requires extra caution. ADHD symptoms may be less obvious in one-to-one interactions, and occur more frequently in busy or highly stimulating group settings such as classrooms. Hence controversies in the assessment, interpretation, and treatment of ADHD in very young children appear as a latest dimension of concerns of ADHD. In the introduction of the supplement edition of Journal of Developmental and Behavioural Paediatrics Gorski (2002) stated:

> "....a rising tide of young children appear to be manifesting behavioural analogs of the inattentiveness, impulsivity, and hyperactivity that define the classical condition. Although it is tempting to label and treat ADHD in 2 to 4 year olds as one would in older children, several distinction demand a fresh exploration and orientation to the issues present in the very young child." (p. i)

Clinical presentation by persons with ADHD is not exactly the same at various times in their life as clinical characteristics of ADHD vary with age. Many studies on a wide range of behaviour problems and ADHD have been carried out and some were concentrated on young and preschool children. For example Gadow and Nolan (2002) investigated the severity of ADHD symptoms, peer relationship and developmental deficit in 224 children aged 3 to 6 years. The samples were drawn from early childhood programmes in New York. They found that children at this age distinctively show different behavioural symptoms between ADHD and CD and information given by teachers (rating scale) was more relevant than that from parents. Using a rating scale Winsler et al. (2000) explored behavioural self regulation in 72 preschoolers aged 3 years. These children were video-taped for 4 occasions over 2 years time. They found developmental delay in speech internalizing in these children.

Nevertheless, young children typically 'act out' the things that come across their mind, having developed less ability to avoid acting on an impulse. However the immediate surroundings may restrain their actions as they learn how to inhibit and regulate their own behaviour based on internal standard rules and guidelines (Barkley, 1997b).

3.10.2.1 Behaviour problems and ADHD in young children

Behaviour problems in young children such as tantrums, defiance, inattentiveness and aggression are to a certain extent normal, and reflect developmental changes and pressures (Richman et al, 1982). Children at the age of three, for example, typically exhibit boundless energy, attend readily to new stimulation in their environment; curiosity and exploration are typical age appropriate characteristics of these young children. There is an invisible line dividing the age appropriate behaviours from clinically significant degrees of overactive, impulsive and inattentive behaviours. Hence it is even more difficult to determine ADHD-like behaviour problems in young children. Developmental and definitional factors could complicate the diagnosis and prognosis process (Olson, 2002). Primary issues for children with ADHD and their teachers are around behaviour and discipline. ADHD behaviours seem to conflict with classroom demands. Misconceptions about children with ADHD occur when the general assumption that 'individuals are able to control attention and impulse behaviour if they choose to' is applied.

Cooper and Ideus (1996) highlight that ADHD is a complex psychological disorder caused by factors both within and outside the child. They also argue that many hyperactive children with behavioural and emotional problems are in a 'pseudo-ADHD' state as a result of family-based or deep-seated psychological problems. These problems may derive from experiences of neglected or abuse, while depression or anxiety could be caused by situational changes in everyday life.

The developmental process in childhood is characterised by complex transactions between the child and its environment (Olson, 2002). A balanced development physically, emotionally, and cognitively is expected in line with a normative concept of age group development. For example at the age 5 to 6 years a child developing typically should have a well-established attention span (Jones, 1991) with the appropriate length of attention for a sustained attention activity around 15 minutes (Call, 1985). However, typically developing children vary greatly in attention span. Fraser (2002) studied the impact of how adults' views on the best approach for preschool children with ADHD influenced the outcome of the child's learning.

According to Fraser, based on interviews with 41 preschool specialists and information gathered from administrative records of public schools, the positive effects were seen in children from good programme structures, with adult acceptance and help, family integrity, good facilities and proper attention to comorbidities. On the other hand negative outcomes were associated with poor understanding of development, less promotion of personal mastery skills, high expectation (perfectionism) and less parental commitment.

3.10.2.2 Persistence of behaviour problems in children with ADHD

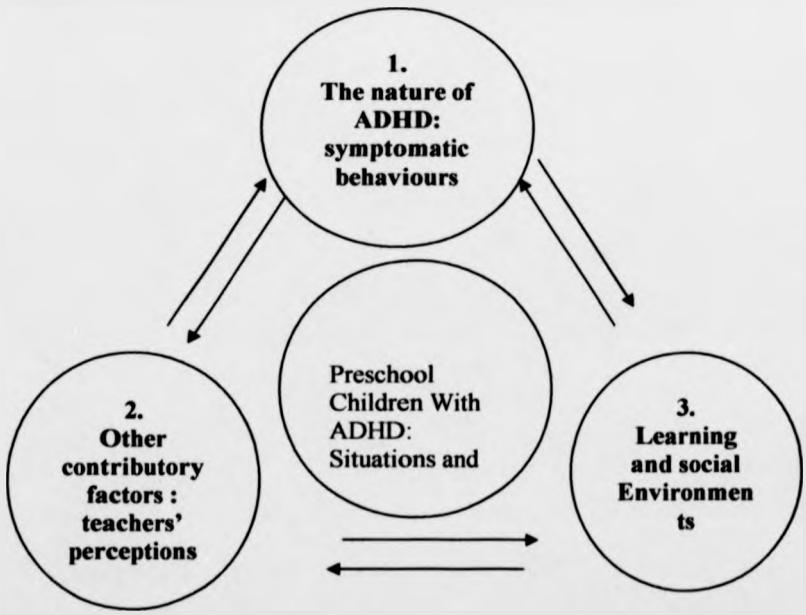
All behaviour patterns are open to change though it rarely happens in a short time or without a strong effort (Roffey and O'Reirdan, 2001). Theoretical explanations of ADHD suggest that children with ADHD behaviours may have difficulties in peer relationships (e.g. Mikami and Hinshaw, 2003) and other research indicates that these tend to persist. For example, preschool children with disruptive behaviours such as conduct disorder and ADHD are often rejected by peers. Studies which have examined social and peer acceptance of children with these behaviours have shown that problems in this domain persist into middle and late childhood, even into adulthood (Volkmar, 2003). Other studies that have explored hard to manage children have consistently found that children with signs of conduct disorder at a young age continue to have learning, behaviour and socialization problems (Hughes et al., 1998; Campbell, 1990; Campbell et al., 1991; 1994). Longitudinal studies on this issue have also shown that behaviour problems related to high activity, inattention as well as discipline problems at preschool age are likely to continue with difficulties later in elementary school (Richman et al., 1982) and can persist into adolescence and adult life (Wender, 2000).

The research findings indicate the negative impact of ADHD-like behaviours in children's social lives as they demonstrate a range of difficulties from challenging behaviours to poor social skills (Place et al., 1999, Woodward and Fergusson, 1999). For example owing to their lower rate of pro-social responses and negative emotion (Hughes et al., 2000), serious impairment in social outcomes may occur in a child's psychosocial adjustment in late adolescence (Woodward and Fergusson, 1999). For

example they are not invited to parties, or in choosing up sides for games (chosen last or not at all) and often teased because they overreact to teasing (Wender, 1987). These precursors may decrease their self-esteem. Further evidence is provided from studies of children whose primary problem is in another domain but who show difficulties with ADHD-related behaviours in addition to primary speech and language difficulties. Lindsay and Dockrell have reported that these children have a higher level of hyperactivity, problems with conduct and self-esteem difficulties than the normal population. This cluster of comorbid difficulties has been shown to persist from the age of eight years to ten and twelve years (Lindsay and Dockrell, 2000; Lindsay et al., 2002; and Lindsay and Dockrell, 2002). These studies indicate that children with ADHD have a higher risk of persistence of comorbid behavioural difficulties.

For the purpose of the present study, three types of variables related to teaching and learning outcomes of children with ADHD have been derived from the review: a) ADHD-related variables b) learning and social environment variables and c) teachers-related and other contributory variables. These three variables are represented in figure 3.2 and described below:

Figure 3.2: Three component factors that shape the situations and needs of children with ADHD in preschool classrooms.



1) ADHD-related variables

The school profile of children with ADHD involves typical problems related to learning and behaviours in general. Uncorrected profiles such as fluctuation in performance, quick mood shifts, tearfulness, aggressive behaviour to mention a few, may cause permanent impairment. This argument is based on behavioural traits in children with ADHD often being seen in an unconstructive way.

Due to their lack of organization and inability to maintain a routine, the classroom is a challenging place for children with ADHD and they frequently perform below their intellectual level (Gaultney et al., 1999). They are often hypersensitive to distraction as well as require more specific and frequent feedback on their work than most children. Additionally, as they manifest inconsistency in a complex manner, they can be difficult to understand which may contribute to exasperation to others. Nevertheless, they have common human needs such as precise and clear communication, self-esteem, and proper stimulation for the task at hand and appropriate guidance/help. Stated differently, in terms of learning needs, children with ADHD have more or less all the basic needs as typical children do but more specific in context. Cooper (1999b) concluded that effective teaching for students with ADHD does not differ in principle from teaching all children. He stressed that;

> ' ....the specific needs of children with ADHD can and should be met within a teaching and learning framework that is appropriate for all children' (p 138)

On the other hand Fraser (2002) argued that the needs of children with ADHD are more compelling than many other disabled children.

Children construct their responses to community, friends, family and school in many ways. The norms or expectations set by the community vary from one community to another. The nature of ADHD develops a gap between a child's demands and the social norms or expectations. For example formal education set in an education system requires a child to comply with rules such as listening and concentration (focused) as well as elements of competition and achievement in school. These demands consequently carry anticipation rules, which have impact on a child's social,

educational and psychological development. However, children with ADHD behave in a way that does not meet the set expectations even if they are not defiant, intellectually or emotionally impaired (Reason, 1999).

Possible classroom behaviours in relation to ADHD expected of children (Cooper and Ideus, 1996):

a) *avoiding engagement in lessons*: this is more usually the outcome of negative experiences such as humiliation and failure. Hence teachers must create positive interaction ; warmth and friendliness; unconditional acceptance and regard.

b) *seeking attention at the wrong time and in inappropriate ways* ; behave the way that is easier to gain teacher's or peers' attention by showing negative behaviours. As a result, they are ignored or rejected. Teachers are expected to act positively such as by ignoring negative behaviour, draw attention and praise for good and desirable behaviour.

c) *communication problems and lack of knowledge* : unclear communication can cause misunderstanding. Teachers are supposed to give them opportunities to tell the story to explain their side.

d) psychological or physiological influences that produce involuntary reactions such as excitement. Teachers' appropriate responses in creating positive learning environments such as verbal reaction or nonverbal expression is expected

2) Teacher related variables (attitude and fears as barriers to successful inclusion)

Other than within the child factors, teacher variables are central in the education of children with ADHD as they play important roles to mediate between the child and the tasks/learning environment (Cooper and Ideus, 1996; Jones, 1991). Fraser (2002), concluded (based on interviews and records review) that teachers' general and thorough acceptance of the child is one of the important factors associated with successful effect on children profiles. There are many teachers' related variables that seem to influence the recognition and the outcome of children with ADHD.

a) *Knowledge about children's educational needs*; Miranda et al. (2002) emphasized the importance of teacher's knowledge on ADHD and skills in using effective teaching strategies in order to respond to the educational expectations of children with ADHD. According to Miranda et al. lack of training has been one of the most indicated barriers in elementary school teachers in dealing with ADHD. Jenney et al. (1995) in their study found teachers stressed the importance of training activities. Pfiffner (1996) has a similar opinion based on her experience consultating in schools.

> "....most teachers are eager for more information about the disorder (ADHD) and about how they can work with ADHD students" (p 9)

b) *Teachers' teaching skills;* Teachers' perception of their ability to teach children with SEN is important. Teachers who believe they were competent enough to deal with the educational needs of children with SEN, show more positive attitude (Stephen and Braun, 1980). Teaching skills and appropriate strategies/structure (that is child-friendly can enhance children's self-concept and self-efficacy such as peer-tutoring, lessons that involved multi-sensory, using effective materials, start with motivational instructions and end with a review of the lesson) are crucial because to teach these children involves additional principle to 'tune-in' the child to the teacher such as: sitting arrangement, communication and cues, step-wise instruction, and active teaching/learning (Green and Chee, 1995)

c) *Teachers' attitude and belief;* the secondary effect of ADHD may affect teachers as the way it affected the child. It is because the demands and the continuous challenges caused by ADHD symptoms may result in frustration and exhaustive feelings (Pfiffner, 1996). Findings from Fraser's (2002) study showed that teachers preferred to deal with learning difficulties in their children rather than behaviour problems and the way the teachers perceived the child's difficulties was found to be critical for the child's learning outcomes. According to Fraser, children whose attention difficulties were seen as personal threats, as their only problem or as related to known special needs did better than those seen as behaviour problems. Hence, teachers' acceptance of inclusion placement for children with ADHD is crucial as it is related to their self-efficiency (Soodak and

Podell, 1993) and consequently affects the teaching and learning processes. Other than teaching and learning teachers have important involvement in many aspects of treatment and intervention for children with ADHD such as listed a few below:

i) Monitoring medication (Lovey, 1999)

ii) Providing reports (for identification and treatments) at an early stage; important source of information as teachers can detail of academic achievements which may be overlooked especially in comorbidity cases (Knivsberg et al, 1999)

iii) Helping children to deal with problems and keep on task as well as to cope with comments from peers

iv) Role model

3) Educational-environmental related variable

> " ... the process of individual development is characterised by complex transactions between child and environments" (p 243) (Olson, 2002).

ADHD is obviously environmentally dependent as the problems typically arise due to demands and expectations made upon the child. In classroom contexts, in order to accommodate the problems with self-control, alteration of environmental condition is important (Fowler, 1999). However, children vary in their response to the same educational environments (Mills et al., 1998). Hence to provide a balanced education in general classrooms for a few students with ADHD in parallel with the needs of the larger population in the class requires that all learners in the class are helped while providing for the critical needs of students with ADHD.

Studies on human support in order to create positive teacher attitude towards the inclusion of children with SEN have found that the head teacher also plays an important role (Jenney et al., 1995; Chazan, 1994). Other physical factors such as specifically designed teaching material (LeRoy and Simpson, 1996), and classroom population (Clough and Lindsay, 1991) have also been found to have an impact on teachers' attitude towards children with SEN. These factors also influence lesson organization (Pfiffner, 1996). Particularly in early childhood classroom, lessons

should be organised in such a way to allow children to make choices where each one of them is considered important and contributes to success of the class community.

3.11 ADHD AND CHILDREN'S PERSPECTIVES

Social and educational investigation of children's perspectives is a relatively new dimension of research development. The United Nations Convention on the Rights of the Child 1989 was the milestone promoting that 'the voice of the child' be given more consideration (Taylor, 2000). A number of authors have discussed a range of issues related to researching children. For example Lindsay (2000) highlighted ethical concerns while others focused on practical matters (Greig and Taylor, 1999), children with special educational needs (Begley, 2000; Detheridge, 2000; Taylor, 2000). Children's rights policy has been reformed due to the UN convention but the policy was not well/widely endorsed in educational matters and practice. (Taylor, 2000; Cooper, 1993). Cooper (1993) suggested that allowing pupils to express their views was not only a legal but also a moral obligation. In line with Cooper, Lewis and Lindsay (2000) stressed that attention should be paid to children's points of views while carrying out research on matters which affected them. Lewis and Lindsay stated;

> "Many adults decide what is 'best' for children ....But children have rights, and they also have perspectives which are unique to themselves. It is our task as researchers, from both practical and ethical considerations, to ensure that we ask the right questions in our studies, those which are important, and we conduct our research in a manner that optimises the opportunity for children's perspective to be listened to- and heard" (p 197)

Cooper and Shea (1999) have investigated ADHD from young people's perspectives. Sixteen students reliably diagnosed as having ADHD, who were studying at a day private (special) school had their points of view heard and reported. Using nondirective interviews to explore the complexity of influence of ADHD from the students' perception, Cooper and Shea attempted to reveal first-hand information about students' experiences on ADHD. They found that all their respondents claimed to have behaviours that were associated with social and educational difficulties. Cooper and Shea noted;

> "For these youngsters the traits of inattentiveness, impulsiveness and

> hyperactivity are significant aspects of their personal histories, which in turn are associated with negative social and educational experiences. However it is also important to consider social context in which these accounts are rooted. Accounts of early childhood experiences, ... are often presented in ways that indicate that personal recollection is mixed with the accounts of other people such as parents" (p 234)

3.12 CONCLUSION

This review has examined the essential components of ADHD. The concept of ADHD has been discussed from historical and theoretical perspectives, and the classification, assessment procedures and treatments have been reviewed. Intertwined in the discussion of ADHD are other relevant factors related to the conditions and the way people interpret the disorder.

Despite the fact that ADHD is a heterogeneous disorder, the general perception of children with ADHD is that they are highly distractible. Incompetent, disorganised, aggressive, lazy and many other negative terms are often used (Cooper, 1999a). The classroom is a place where children of school age spend significant time. This setting is important in supporting personal, social, and scholastic development of children, but classroom environments are complex. Children with ADHD frequently manifest problems in this type of setting which requires high degrees of planning, coordination, and control.

Teachers have very important roles that influence children's overall development with particular importance for children with ADHD as stated by Cooper and Ideus (1996):

> "This is specially the case where socially and academically vulnerable children, such as those with ADHD, are concerned. The way the child is handled in the school; the way the child is responded to by teachers; the opportunities that the child is given to achieve success— all of these things can make the difference between school being a place that helps children with ADHD overcome or cope with their difficulties or a place that adds to and exacerbates their difficulties." (p 37).

This review has also revealed the possible uniqueness of children with ADHD. Many variables may influence their ADHD-like behaviours. Their success in schooling is dependent on interrelated factors within themselves, teachers and environments and in their interactions. In particular the review shows that there is no empirical evidence

on ADHD in Malaysia as no studies have been carried out in this specific area of special educational needs. Hence there is a need to identify the case of children with ADHD-like behaviour for the teachers and the special education department Malaysia. In relation to cultural aspects, relatively little research has been done compared with recent research on biological/medical factors. For example Purdie et al. (2003) examined 74 studies related to intervention for children with ADHD and found none that specifically addressed cultural factors.

These two elements will also provide evidence which will enable further refining of the model of ADHD proposed on page 77. Thus it strengthens the requirement to investigate the situation of ADHD in Malaysian children. With regard to professional and practical concerns of current educational situations in Malaysia, the focus in the present study was influenced by the assumption that children with ADHD are not much different from their counterparts in the developed countries. Appropriate methodology and instruments used in investigating the issue is vital. The next three chapters discuss the chosen approaches and relevant arguments on methodology.

Chapter 4

METHODOLOGY I: REVIEW OF LITERATURE AND RESEARCH DESIGN

Educational research is complex and it covers many types of methodologies. New knowledge on teaching and learning as well as educational administration were developed through the findings of educational research. A variety of different methods were used in this study. Hence this section discusses the methodological considerations and the different methodologies; and the quantitative and qualitative as well as mixed methods in relation to investigating the central issue of ADHD in Malaysian children.

4.1 METHODOLOGICAL CONSIDERATIONS

The focus of my study is to explore the issues of children with ADHD in Malaysian preschool classrooms and to find out the impact of the practice on the inclusion policy. It is suggested that children with symptoms of ADHD in mainstream classrooms may be less likely to succeed in academic and social interaction than those who do not have the symptoms (Cooper, 1999). The way those pupils cope with the mainstream classroom situation and the approaches with which they are managed by their teachers, as well as the peers' responses in the Malaysian societal/cultural value context are a complex area of study, which necessitates appropriate methods in order to produce clear data. Hence, to understand the complexity of the children with ADHD and to relate it to inclusion, a process of a combination of quantitative and qualitative methods (Denzin and Lincoln, 1994) was needed. Quantitative and qualitative methods were employed at different phases of the research process. In other words, the study comprised of a number of phases, some of which are qualitative, others are quantitative; but all are equally necessary for achieving the objective of the approach.

4.2 QUANTITATIVE RESEARCH

Quantitative research methods have been widely used and accepted in education. The social environment of the quantitative research is assumed to be rather constant

across time and setting (Gall, Borg and Gall, 1996). Based on carefully selected samples, quantitative empirical research is designed to generate or draws upon quantitative data, which is numerical in nature. It is also assumed that the findings can be generalised to the general population from which a sample is drawn. In certain contexts, these are also known as confirmatory, hypothesis testing, or predictive methods. For example, regression analyses allow researchers to predict scores on dependent variable from scores on one or more independent variables.

The data collected are developed to knowledge by subjecting them to statistical analysis. The results from quantitative research are typically reported and interpreted with the backing of strong statistical analysis. The findings are replicable by future researchers and past research theoretical constructions could be revised by new statistical evidence. For a researcher working by means of quantitative research, statistical analysis is an important subject (Bryman and Cramer, 1997) as to decide on suitable statistical procedures and how to interpret the results are crucial elements in this research paradigm. Social surveys, interviews questionnaires or questionnaires are among the typical designs in quantitative methods. A number of variables within the research interest entail data collection. Fundamentally, quantitative methods in research are credited for establishing purpose, ensuring testability, replicability, precision, objectivity and generalisability.

Over the past four decades, a significant number of studies on ADHD have accumulated internationally. A review of past studies on ADHD revealed large interest in the utilisation of quantitative research methods {see for example, Gadow and Nolen, (2002); Gumpel, et.al. (1998), Rapport, et.al. (1999)). The extensive uses of quantitative approach in identifying broad aspects of ADHD are commonly considered as acceptable and useful. The quantitative research methodologies do have strengths for ADHD research. These may be summarised as:

- Appropriate to measure overt behaviours.
- Strong in measuring descriptive aspects of ADHD such as prevalence.
- Allow comparison and replication.

- Reliability and validity can be determined more objectively than by a qualitative approach.

Additionally, there are arguments that generally quantitative methodology has pragmatic benefits in terms of data collection (large-scale), data analysis (at reasonable cost and effort) as well as imparting statistical evidence. However, quantitative research methodology is mainly incompatible to ascertain deeper explanations of children with ADHD in terms of the important psychological factors of the ADHD concept such as affection and attitude.

4.3 QUALITATIVE RESEARCH

Qualitative research methodologies are strong in providing a deeper knowledge about a particular phenomenon, which potentially counteracts weaknesses within quantitative methodologies. There are many ways for inquiries using qualitative methods in researching classroom-based issues. Understanding how an individual or individuals behave in a particular social situation, event, role, group or interaction is the main purpose of qualitative research rather than to prove or disprove a theory.

The researcher is the primary instrument for data collection (Merriam, 1988) through the data collected by interviewing, conducting first hand observations and taking field notes (Patton, 1990; Creswell, 1994). According to Patton, the starting point of qualitative research begins with the individual and his/her environment and what information is revealed. The openness of this inquiry is thought to be more relevant in reaching a well-grounded source of data, rich descriptions and the explanations of process occurring in local contexts (Miles and Huberman, 1984). The data collected is valued for its 'insider' account (Miles and Huberman, 1994). Consequently, the important emphasis on qualitative research is the individual and his/her setting as well as what can be learnt from the individual in context.

To gain a deep and empathetic understanding by accessing the meaning that individuals gave to their measurable behaviours, qualitative approach can be used to focus on the possibility of understanding the implications inherent within classroom relationships concerning pupils with ADHD and their peers.

Comparatively, qualitative research on children with ADHD is fairly rare. Lack of standardisation may lead some researchers to avoid this approach. Furthermore, the openness of the approach may present a difficulty for researchers with respect to ensuring the replication of the research (Glesne and Peshkin, 1992). Nevertheless many researchers consider qualitative methods superior to alternative approaches, in order to obtain meaningful conclusions where statistical representations are not adequate for clarification of human interactions. The relevance of qualitative approaches in studying Malaysian pupils with ADHD in inclusive settings is enhanced by the significant influence of classroom elements on the implementation of inclusive education (IE) in Malaysia (Haniz, 1998). Special educational needs in Malaysia has been historically grounded within the tradition of the missionary movements and it was gradually expanded alongside the development of the educational system in Malaysia.

Since the other aim of this study is to gain an understanding of how pupils with ADHD view their own particular situations, qualitative methods can:

o Allow affective components of pupils with ADHD to be explored in greater depth.

o Encourage informants to express their conceptualisation from their own perspective rather than those that have been predetermined by the researcher. Therefore the flexibility of the methods is appropriate for this exploratory study.

However, the small sample of this inquiry may not lead to generalisability being based on the views of the informants to draw conclusions for the general population. What is more critical about the method is that the cases chosen for the study may be criticised as being untypical and there may be more concern in regard to the fidelity of the findings.

Nevertheless, the utilisation of a qualitative approach in this study opens the chance to uncover the complex nature of pupils with ADHD in Malaysia so as to reveal the underlying implications of the complexity of social interactions of the pupils who needs to be subjects for an in-depth analysis.

4.4 THE ADOPTION OF MIXED METHODOLOGY

Whilst not arguing a hierarchy of the quantitative and qualitative methods, this study uses mixed methodology to provide greater strengths to the researcher to increase the validity of the information collected. As the present study is exploratory in nature, the research design benefits from a mixed methods design, which includes both quantitative and qualitative data collection and analysis. Quantitative data is partly consequentially used as a basis for collection of qualitative data and then the same data thoroughly analysed to answer the research questions. On the other hand, the qualitative approaches are used to answer other interrelated research questions. The collected data are analysed accordingly and the results from each approach are used to make multiple inferences that are then pulled together at the end of the study.

This study focuses on ADHD (a new grouping of SEN in Malaysia) and specifically on young pupils in the Ministry of Education (MOE) mainstream schools. There is no standardised screening instrument to diagnose ADHD cases in Malaysia. Therefore in order to explore all components within the research questions, the representations of scores on a teachers' rating procedure (the ADHD Checklist (ADHDC) developed for this research) needed to be considered in relation to further related evidence collected during the observations and interviews. It is believed that mixed methods counteract the weaknesses of each method. Jayaratne (1993) stated "qualitative data can support and explicate the meanings of quantitative data" (p.117). Based on those arguments, a mixed research methodology is considered a worthwhile means for gaining a fuller understanding of children with ADHD.

To maximise the strengths of the mixed methods approach the following suppositions were adopted in this study:

- Much ADHD research is still largely exploratory in nature. Unforeseen events and evidence are more likely to happen within the qualitative inquiry.

- Quantitative analysis is appropriate to assess descriptive components of ADHD–like behaviours of preschool pupils involved: the teachers act as the informants.

- Qualitative analysis may complement the findings of the quantitative methods by indicating the extent of the accuracy of teachers' ratings of their pupils' behaviours, and providing insights into their meaning.

- Studying pupils with ADHD from an educational perspective involves behavioural components as well as psychosocial components. Thus a qualitative approach is appropriate to examine the informants' points of view.

- ADHDC, the instrument used to screen pupils with ADHD in the present study, like most ADHD rating scales, primarily focuses upon observable behaviours as reported by informants (parents or teachers). Hence, observations and interviews allow the researcher to develop an overall picture of pupils with ADHD under investigation (better understanding of issues with which they struggle by asking them directly).

The difference between the two qualitative and quantitative methods requires different data analysis methods. Although both typically representing events and behaviours, qualitative data analysis deals with the words and meaning interviewees use to conceptualise the complex interpretations whereas the quantitative data depends on the analysis of numerical data.

4.5 CASE STUDY AS A RESEARCH STRATEGY

Many efforts have been made to define precisely case study such as;

> - "Case studies are attempts to grasp and talk about the world of human experiences at a common sense level; a naturalistic process of truth seeking" (Kemmis, 1980, p.101).
>
> - "An examination of an instance in action... to capture and portray those elements of a situation that give it meaning" (MacDonald and Walker, 1975, p. 76).

The case can be people, an institution, programmes or whatever created by researchers who make the case a case (Kemmis, 1980). However, there is a boundary for the case because a researcher cannot deal with the totality of anything. Typical case study research uses a variety of sources to gain information.

Therefore, case studies are useful in exploratory, descriptive or explanatory research (Rowley. 2002) as they provide answers to "How?" and "Why" questions about a contemporary set of events over which the researcher has little or no control (Yin, 1994).

Scepticism about case study research comes from the view that this method or strategy lacks rigour and objectivity, as well as from questions about generalization offered by this approach. Though generalizability is not a goal or priority in qualitative research (Denzin, 1983), some argue that case study enables generalization to be made. Stake (1994) stated that knowing things on the surface does as good as knowing nothing. He emphasises the importance of using implicit understanding in generalizing from the case;

> " Case studies will often be the preferred method of research because they may be epistemologically in harmony with the reader's experience and thus to that person a natural basis for generalization" (p.64)

On the other hand, case studies can invade privacy and be highly intrusive into lives of the people under study. Walker (1983) stated that;

> " ..... To interview someone, to observe someone teaching, to talk with teachers about the head, or with pupils about teaching, are each potentially undermining of the facades which individuals and institutions construct in order to make the management of schooling possible" (p. 157).

Thus ethical considerations pertaining to participation, data and publication need to be given serious attention. Among the basic criteria are;

- Interviews should be conducted on the principle of confidentiality.
- Interview data should be used with the individual's consent.
- Reports should aspire to reflect participants' judgements and perceptions of reality.

4.5.1 Case Studies as a Focus and Data Collection

The case study approach to research in educational aspects of children with ADHD is relatively new in comparison with its use in other disciplines such as psychology, and medicine. According to Stake (1994, in Denzin and Lincoln, 1994), intrinsic

case study is the study of issues by a researcher with the aim of achieving a personal understanding of issues investigated and it does not seek to explain or to disprove any hypothesis. Considering the appropriateness of a method of investigation for a particular research study and the theoretical and substantive problems involved (Burgess, 1985), and based on the definition and the properties of qualitative case study offered by various researchers, case studies are thought to be the best general approach for the major part of this study on Malaysian children with ADHD in inclusive preschool settings.

The accuracy of the data was verified through various procedures, such as triangulation. In qualitative research, the researcher is the key instrument (Creswell, 1994 and Bogdan and Biklen, 1992) and I perceived the barriers which needed to be dealt with as a new researcher. The skills needed to be polished up prior to data collection although the pilot study had been carried out and a significant level of self-confidence was achieved. Another typical barrier that I faced was the command of language where English is my second language. Although the fieldwork was carried out in the Malay Language as it was done in Malaysia, the issue of language was still the problematic part owing to the need to translate the meaning of the words or phrases particularly the dialect terms uttered by the informants during the interviews. A more critical barrier was the problem that putting ideas creatively and critically was not a characteristic part of my schooling, where the stress was on information transfer. However my personal and professional experience in teaching and referral resources and not least the supervisor's guidance were the constituents that made completion of the research possible.

4.6 BASIS OF DATA AND METHOD OF TRIANGULATION

Other than data triangulation, method triangulation was adopted through the combination of the ADHDC, interviews and observations. The ADHDC served as the initial method of data collection to ensure that relevant concerns and participants were included in the research strategy. As stated earlier, there is a lack of past research on ADHD in Malaysia, which could be used as a guideline for this

study. Hence it was a necessity to develop the ADHDC and pilot it in gathering and assessing the applicability within the Malaysian context.

4.7 CONCLUSION

It is obvious that there is no simple formula to carry out a study using mixed methods. The literature review on methodology gave a clear picture of possibilities in planning the present study which has been developed with consideration of the time limitation, budget and the research questions to be answered. The next chapter discussed the questions and the procedures engaged prior to main data collection.

Chapter 5

METHODOLOGY II: SPECIFIC RESEARCH QUESTIONS, INSTRUMENTATIONS AND PILOT STUDY

The initial focus of my study was to examine the situation related to teaching and learning of children with ADHD in Malaysian preschool classrooms in inclusive education settings. As discussed in chapter one, the term ADHD is used for pupils with a significant number of ADHD behaviour symptoms based on their teachers' rating on the ADHDC, a teacher rating scale developed for this research (see 5.5).

In Malaysia, the Ministry of Education (MOE) views special educational needs (SEN) from a medical perspective since a child will only be recognised officially as having special needs after being certified by medical professionals. The process of intervention is directed at supporting the child to cope with mainstream education, without considering any structural changes that may be necessary to accommodate the child within mainstream schools (Haniz, 1998). Children with ADHD in the mainstream classes could be educationally excluded from general mainstream learning. Thus there is a need to determine the present circumstances of Malaysian preschool children with ADHD for the purpose of initiating necessary strategies for these children to behave appropriately particularly at preschool level.

There is little research on the diversity of variables related to ADHD such as ethnicity, age, and gender and socio-economic status (Gingerich et al, 1998). But, according to Biederman et al, (2000) age is significantly associated with decline in total of ADHD symptoms in children (Biederman et al, 2000). These variables were applied to the children with ADHD in the Malaysian context. So, with the focus on gathering data about the actual situation of children with ADHD in Malaysia, the initial purposes of the study were:

a) To produce empirical data on young children with ADHD characteristics in Malaysia. A significant question to be looked at is whether there is the same situation as has been found in other countries in terms of the rate of ADHD cases

and other factors related to teaching and learning of children with ADHD in mainstream classrooms.

b) To identify educational and professional factors which influence the learning and behaviours of Malaysian children with ADHD.

By doing a study of children with ADHD in preschool children I hoped to enhance my understanding of children with ADHD. I also wanted to make recommendations to the MOE, about educational improvements in teaching children with ADHD in Malaysia and hopefully to provide answers to commonly asked questions pertaining to these children in mainstream preschool special programmes run by the MOE, enhancing teachers' understanding of ADHD.

Early intervention serves as a meaningful starting point in providing an appropriate program for children with special needs particularly with ADHD in inclusive settings. The changes a school has to undertake in order to ensure the success of an early intervention strategy is one of the issues concerned.

5.1 MY PERSONAL CONCERNS

My personal interest in children with ADHD did not begin with this study. I was a secondary school teacher for eight years, before I went for a one-year specialist course at Specialist Teacher's Training Institute (STTI) in 1989, in Kuala Lumpur and after my graduation became a special teacher for the secondary school for visually impaired (VI) children in an integrated programme. There were VI students with behaviour and attention problems in the programme. To improve my professionalism, I pursued a Master Degree at University of Malaya in Kuala Lumpur and after completing the course I was posted to the same programme. Besides dealing with the visually impaired students, I was given the responsibility to organise a programme for students in lower secondary school classes who performed poorly academically especially for those who were unable to read. They were excluded from the special educational needs (SEN) category even though they had some SEN characteristics such as short attention span, limited memory, and daydreaming in the classroom. These groups of unidentified students with specific

learning difficulties in the mainstream were labelled by their teachers as "lazy" or "problematic" students particularly those who were involved in truancy or discipline problems.

In 1994 I was transferred to an integrated Learning Disabilities (LD) programme in another school to overcome the current critical shortage of trained specialist teachers in LD programmes. In this programme I had hands on experience dealing with various type of students with learning difficulties including children with severe hyperactivity and inattentiveness. As a special teacher, children's behaviour management was part of my core business in the classroom. Children's attention was a crucial factor in managing their behaviour and social skills. That component of the above experience contributed a solid reason for my special interest in ADHD.

5.2 STATEMENT OF THE PROBLEMS

Traditionally Malaysian teachers will comply with the MOE directives to implement inclusive education, but will be influenced by their vision, skills, resources as well as an action plan in dealing with children (Haniz, 1998). Furthermore, as the current practice of special education in Malaysia has restricted the chances for children with ADHD to receive the proper educational provision they need, children with behaviour problems, in particular those with ADHD, need to learn a technique to monitor and control their attention.

Children with ADHD respond best to motivation and positive reinforcement and perform relatively better on high-interest tasks (Carlson and Tamm, 2000). Teachers' reinforcement and teaching strategies will influence the child's ability in controlling his or her ADHD related behaviour in the classroom. The concern is about whether the teacher has sufficient strategies and alternative approaches for teaching children with ADHD.

The nature of ADHD results in a variety of needs. Children with ADHD have problems complying with school demands. The issues concerns the type of problems encountered by Malaysian teachers in providing some special accommodation in

order to meet the unique needs of the child with ADHD. Besides the needs, the impact of inclusion of the child with ADHD on the normal peers is also a concern.

5.3 GENERATING RESEARCH QUESTIONS

The process of generating the research questions was influenced by many factors. The main factors and the process of thought involved are described in Table 5.1.

Table 5.1: Generating research questions

	Researcher's Reaction	**Researcher's Thought**
Area of concern	As a desk officer for Remedial Programme in CDC Malaysia, I realised that many children are struggling with basic skills reading and writing. I was concerned about the provision made by the schools and the system and the needs of those children.	These concerns came from discussion in the media about the growing number of children in primary and secondary schools who fail to acquire basic 3R skills generally and my observations during visits to the remedial programmes.
Modified by	1) My own experiences as a late developed child, as a teacher for children with SEN, and as officer in charge of preschool programmes as well as remedial programmes at the CDC 2) My involvement in planning the new programmes for Special Education Department Malaysia	Informal chats with teachers and parents about "difficult to manage children" reveal that many children with behaviour problems are in the mainstream classroom and they have difficulty in coping with school tasks. The teachers' lack confidence in dealing with the problems because of their ignorance of their nature. I need to talk to more teachers to gain a clear picture of what they think and what they do when dealing with difficult situations in the classrooms.
Identifies location	I need to look for more information about ADHD in Malaysia from teachers and children with ADHD in the natural school setting	I should observe the children with ADHD in the classrooms and interview their teachers for further detailed information to: Investigate why and how the teachers' treat children with behaviour problems and; How children perceive themselves and their role in school.

	Researcher's Reaction	**Researcher's Thought**
Refines the purpose	To establish valid data on the prevalence of Malaysian children with ADHD characteristics by developing an ADHD checklist (ADHDC).	If I could identify the rate of ADHD cases in Malaysian young children, then I may be able to establish the reasons for the emerging need of proper/specific programmes for children with ADHD.
	To establish valid data on teachers' views/perceptions about children with ADHD problems in mainstream classrooms.	If I can highlight enough data to establish the actual classroom behaviour of children with ADHD and the provision they have.
	To establish valid data on the understanding of children with ADHD with respect to themselves and their role in school.	If I can, produce factual data by talking to children with ADHD-like behaviour to gain appropriate understanding of Malaysian children with ADHD.

5.4 SPECIFIC RESEARCH QUESTIONS

The intention of this study is to seek information on the nature of children with ADHD at the preschool level, the impact of ADHD related behaviour on the learning process and the instructional strategies used by the teachers in dealing with behaviour management in the classrooms. Mainly, this study was designed to address the following four specific questions;

1) What are the relative proportions of children with ADHD (within the chosen cut-off point) with respect to overall cases, boys and girls, urban children and rural children and between the ADHD subtypes?

2) What are teachers' understandings of SEN and ADHD, and how do they use these understandings in working with children with ADHD characteristic behaviours in the classrooms?

3) What are the factors associated with teachers' approaches to teaching children with ADHD and planning tasks or activities for children with ADHD?

Cultural, racial, and religious factors may influence children's perceptions of life and learning. Listening to children's views about school life may contribute an important input to a better understanding of their needs. Based on the above assertion this question occurs:

4) What are the perceptions of the child (with ADHD) on himself/herself and his/her role in school?

There is no single theoretical framework that dominates the research on ADHD. In an attempt to investigate children with ADHD, researchers have used a variety of methods. Techniques that have been widely used to investigate the nature of ADHD cases include questionnaire, checklist, interview, clinical observation and self-report. One traditional way that allows the researcher to collect information about ADHD is by questionnaire or checklist. These methods also have strengths but also limitations as some of terms used in the questionnaire or checklist may carry several interpretations to the participants which affect their responses (uncertainty about the response outcome). This could decrease the validity of the findings to some extent. As the number of participants is large, it is difficult to query their responses though educated people such as teachers are very often in the introspective situation.

5.5 CONSTRUCTION OF RESEARCH INSTRUMENT ADHDC

The Attention Deficit Hyperactivity Disorder Checklist (ADHDC) was specially developed for this study, to assist in screening of ADHD in the Malaysian classroom context. It was based on a review that provides an indication of the strength of both ADHD symptoms: inattention and hyperactivity/impulsivity and also aggression (appendix 1). A survey using this ADHDC was incorporated within the case study in order to seek new insights of the degree of ADHD related behaviours in preschool children. The reason for not using standardised ADHD rating scales is that the scales have been developed in other countries and they are not exactly suitable because of cultural differences, and differences in educational structure, system, and practices.

During the construction of the items in ADHDC, some important considerations were taken into account: the items had to be able to generate information to describe the

child's ADHD behaviour in the Malaysian context: its findings had to be able to suggest guidelines in development of the observation schedule; information yielded had to provide guidelines in selecting schools as the sample for qualitative approaches.

5.5.1 Translating the ADHDC

The ADHDC was translated into the Malay Language, Malaysian national language. It was not a word-by-word translation. As a diploma holder in translation (English to Malay), I used the skill to translate the English version of ADHDC into Malay. To ensure that the meaning and the content of the items are the same in both languages, help from a Malaysia postgraduate student studying in translation studies at the University of Warwick and Malaysian Curriculum Development Centre (CDC) officer was obtained for back translation procedure.

The Malay version of the ADHDC was translated into English by the postgraduate Malaysian student mentioned above and subsequently, this English version was translated into Malay by the CDC officer who holds a diploma in translation (Malay – English).

5.5.2 Item Selection

An English version of the ADHDC was derived and developed for Malaysian children based on the standardised rating scales developed internationally. In particular, the rating scales by Barkeley (1991), Conners (1997), Du Paul et. al. (1998) and Taiwanese Teacher's Rating scale by Yang et. al (2000) were examined closely. The items from each of these scales were listed and those which concern ADHD were identified. In order to make this scale (ADHDC) manageable, it was decided to identify about 25 items. The ADHD items from these scales were used to produce the draft list. This was compared with the DSM-IV list of criteria to ensure all the criteria were represented. Finally items which were considered to be inappropriate in a Malaysian context (e.g. "argue with adults" which is a highly unusual behaviour in Malaysian children because of cultural expectations of children) were omitted. This process resulted in a scale of 25 items; 13 which were considered to identify hyperactivity/impulsivity and 12 were considered to identify inattentiveness.

5.5.3 Number and scoring of items

There are 25 items in the ADHDC. The items are intended to make a distinction between two types of pupil's behaviour related to ADHD, inattentiveness and hyperactivity behaviour. The number of behaviours chosen was considered as easier to be managed by teachers and there are approximately equal numbers of items in the two expected subscales.

To avoid the possibility of bias by the teacher in doing the rating, nine of the items were presented in negative forms. The arrangement of positively and negatively worded items was made in random order.

The negative items are item 1, item 3, item 4, item 5, item 6, item 11, item 20, item 21 and item 24. The reverse scoring of those negative items is as follows;

Choice 1 was scored as 5
Choice 2 was scored as 4
Choice 3 remained
Choice 4 was scored as 2
Choice 5 was scored as 1

5.5.4 Instructions to Teachers (respondents)

The front cover of the ADHDC contained explanations to respondents about the rationale of the study with my personal identity included. Respondents were given the assurance that all information would be afforded full confidentiality. They were not asked to identify themselves but strongly requested to respond to all the items in the ADHDC.

5.6 PILOT STUDY

Pilot studies were carried out at the selected preschool programmes run by the MOE in Malaysia from June 24th 2000 to August 12th 2000 and from 15th April 2001 to 13th May 2001. The purpose of the first pilot study was to determine the scoring profile of the instruments and procedures developed for the research fieldwork. The initial aim of the pilot study was to test the suitability, practicality, reliability and the validity of

the ADHDC and other instruments intended for the main study. The piloting processes were divided into 4 stages;

a) *Rating of preschool pupils' behaviours using ADHDC and reliability study.*

Five teachers from selected programmes were involved in this procedure. One was from an urban area and the other four were from the rural schools. The teachers were requested to rate each pupil in their preschool class (N=101 pupils). A note explaining the purpose of the rating tasks and the information needed from the task was provided together with the rating forms to every teacher. They were strongly requested to do the rating of all items for each child as honestly as possible as well as to fill the information needed in the early part of the form.

Upon receiving the completed forms from the teachers, another set of blank ADHDC forms was distributed by hand to every teacher for the second rating procedure, for a test-retest reliability study. This second rating was done for half of the pupils in their class by choosing at random 50 pupils of the same group of pupils as the first rating. The teachers were not informed earlier about the oncoming second rating to avoid them memorising the rating given to each item for every pupil. The interval between the first and the second test was two weeks. The collected data were analysed using the SPSS package.

b) *Classroom observations*: The second phase comprised the observations which focused on learning behaviours and social interactions shown by pupils identified as having ADHD (through the process in (a)). Based on the result of the first ADHDC rating, a few pupils with the highest total scores were chosen as a tentative sample. A comparison of notes with the teacher recommendations on the pupils' behaviour was made in order to select the proper sample for observation. Three pupils (boys) from three different programmes were finally identified and chosen as cases for observation. A series of observations within five days schooling time was carried out for each of the three pupils. One peer from each programme was also observed as a control sample. This peer was chosen according to the recommendation of the class teacher as being a normal or unexceptional pupil. The

design for the observation procedures was piloted for testing the appropriateness of the coding sheets specifically developed for the actual fieldwork. Two types of observations used to collect the data were;

i) Structured observation; this procedure was used to detect the off-task behaviour engaged by the targeted pupils (pupil with ADHD as well as the comparison peer) based on the selected behaviours listed in the coding sheets (see appendix 2). At the beginning of the piloting process, coding sheets for 10, 20 and 30 seconds intervals for time sampling were tried out to determine the most practical interval time. Finally the 20 seconds interval was chosen as an interval for the rating on observation of the targeted behaviours. The observation was set for 10 minutes time (30 intervals of 20 seconds). The tape produce the sound "mula 1" or begin 1 in English for starting point, followed by "mula 2" or "begin 2" when the first 20 seconds finished followed by "mula 3" and so on as every 20 seconds passed, up to "mula 30" for the last 20 seconds of the 10 minutes. The observation stopped immediately when the tape sounded "tamat" or "end" (in English).

Two second observers (one PhD student doing her data collections in the observed programme and an assistant teacher in another programme) took part in five sessions out of 16 sessions of the observations in order to obtain a comparison of the coding, measured by the researcher.

There was an intention to observe the pupils under specific conditions in order to have a balance across the important points of the day. Particularly, at the beginning of the lesson, in the middle of the lesson, at the end of the lesson, before recess and after recess time. However in organising the observation sessions, it was difficult to achieve the target of observing the lesson in balance for various conditions for every pupil.

ii) Unstructured observation; this procedure was the means to collect information related to the social events experienced by pupil with ADHD which happened during the classroom activities as well as during the free play time. Field note procedure was used to record data in this section.

c) *Interview with teachers.*

Three preschool teachers, involved in the observations were interviewed in series. A tape recorder was used in every session of interview with the consent of the interviewee. Each tape was labelled with date, interviewee code, which was later coded according to a standard system for example; I/B/26.7.00 for ;

I= interview; B= interviewee's code name (Bashirah)
26.7.00 = the date interview take place (26^{th} of July 2000)

Two types of interviews were piloted:

Semistructured interviews with teachers were conducted to gain information on teachers' knowledge and perceptions related to special educational needs, inclusive education and ADHD. The other information collected by this approach was the teachers' perceptions of the selected pupil with ADHD in their class. However the interview was carried out with the aim to test the appropriateness of the interview schedules developed to collect the intended data in main study.

Unstructured interview was carried out after every classroom observation. Some sessions were done immediately after the observation and the rest were carried out later the same day owing to the teacher's time constraint. The questions asked during the interview sessions mainly depended on the event and the situation observed.

Through the analysis of the pilot study data, the methodologies for actual fieldwork were readjusted with consideration of the practical difficulties which occurred during the pilot study. Practical difficulties in the first pilot study were used to anticipate the precautionary steps needed for the actual fieldwork. More importantly, the observations of the three selected pupils with ADHD in the pilot study confirmed that they had symptoms of ADHD as identified by the ADHDC. After completing the observation procedure, and data analysis, it was concluded that the evidence supported the validity of ADHDC as observations confirmed the pupils' problems. From the collected ADHDC rating data, the test-retest reliability of the ADHDC scale was computed.

d) Second pilot study; interview with preschool pupils

The second pilot study was conducted in Malaysia for 4 weeks, focused on polishing up the interview skills and interview schedules with preschool pupils since the researcher was not very familiar with the practice of interviewing young children. Adjustments were made to the questions. The questions were used to stimulate interaction as well as to probe into pupils' inner thoughts.

The results of this pilot study were used to determine the methods to be used in the main study. However some additional approaches were also found to be helpful when implementing the main study (fully reviewed in chapter 6: Main study).

5.6.1 The outcome of the pilot study

Through the analysis of the data collected, the designed methods for fieldwork were judged to be appropriate and manageable with some adjustments. The result of ADHDC rating was using as a predictive tool for the actual fieldwork and the test-retest reliability coefficients indicated an acceptable level of consistency for most of the ADHDC items (see 7.3). Also gained from the pilot study were some experience of data organization and other unforeseen difficulties.

Some common factors related to ADHD in Malaysian preschool children were found to be in line with ADHD's factors internationally. The outcome of the pilot study also revealed that the information given by teachers in their rating on pupils' behaviour was reasonably consistent with the findings from observations.

5.7 ACTUAL FIELDWORK: NEGOTIATING ACCESS AND DATA COLLECTION PROCEDURE

Getting access to Malaysian schools takes time, as there are several gatekeepers. The first gatekeeper was the Education Planning and Research Division (EPRD). No research can be conducted in any institutions under the MOE without the approval from the EPRD. Using the approval letter from the EPRD, I applied to the State Education Department (SED). Since my study was done in Kedah and Kuala Lumpur (KL), both states' SEDs were approached through the SED desk officers of preschool

programme. The third gatekeeper was the school head teacher. The head teachers would only allow entry, most particularly research to be done in their schools after seeing official letters from EPRD and SED.

Once I acquired the approval from the SED of KL as well as from SED of Kedah, the co-operation from the SEDs' preschool desk officer was enlisted to help distribute the ADHDC to selected teachers during a scheduled state preschool teachers meeting. The strategy of distribution was chosen for the reason that as a researcher studying in UK and doing a fieldwork in Malaysia, time was very limited and precious. A set of the ADHDC forms was distributed to each of the selected preschool teachers (discussed in detail in chapter 6).

I gave a talk to the selected preschool teachers on my research during an in-service training day, run by the respective state education department (SED). In the early days of my study, I worked with the SED preschool officer who provided the necessary information for access and contact requirements. Access and negotiation were continued in subtle but obvious ways through out the study.

Upon receiving the completed forms, a prospective sample of pupils with ADHD to be studied was identified. The head teachers were briefed on the purpose of the study and particularly given an explanation of the preschool teachers' responses to ADHDC and how interviews could basically shape the future of the development of special education in Malaysia generally, and particularly the educational provisions for children with symptoms of ADHD. They were also encouraged to ask for further clarification concerning the study if they felt it was needed.

I had to work within a limited time as the school terms ended in the first week of November 2001. As I had made a broad plan about the time to spend on each case, the activities for gaining needed information as well as which days to attend, the plan was continuously revised as circumstances changed.

5.8 CONCLUSION

This chapter has explained the attempts made to ensure the reliability and validity of the present study by various approaches including piloting and revising the instruments and triangulating the data. Through the experiences collected during the pilot study, a manageable and appropriate research design was finalised. As the main fieldwork was intended to reproduce the data from the same setting with similar methodologies, an adequate adjustment to the fieldwork agenda was scheduled with fair consideration of the intended outcome. The next chapter will explain the techniques used for data gathering and outline the investigation.

Chapter 6

METHODOLOGY III: MAIN STUDY

The next three chapters (Chapter 6, 7 and 8) are presented sequentially, based on the occurrence of events and the information collected during the fieldwork. As pointed out in chapter 5, a number of techniques were used to obtain data. The decision to use a mixed methods approach derived from the objective to investigate the contemporary issues regarding the pupils with Attention Deficit Hyperactivity Disorder (ADHD) in Malaysian preschool mainstream classrooms. Particular focus on the impact of classroom activities on those children was the important part of the study. This chapter presents information that links the findings of the data presented in chapter 7 and 8. It consists of three closely related sections, with the present chapter discussing the environmental and practical aspects of the fieldwork used in the research with respect to the typicality and the comparison of the settings used for data collection.

6.1 FIELDWORK AND DATA COLLECTION

The main study data collection took place in Malaysia from 1st July to 31st October 2001. Three main methods were used to gather the related data. The data-gathering process proceeded along the same lines as the pilot study procedures as mentioned in chapter 5 but with a number of refinements to the qualitative procedures.

This section describes the development of data collection, which was carried out in two phases. ADHDC rating data were collected in the first phase of fieldwork. The data were essentially used to determine the participants for interviews and observation procedures in the second phase of fieldwork. The detail of the data collection is discussed specifically with reference to approaches in the coming sections of this chapter.

My activities during the fieldwork included the following.

1. The ADHDC forms were distributed to the selected teachers in Kuala Lumpur and Kedah. Upon receiving the completed forms, the participants for the second part of the study were identified following scrutiny of the data.

2. Classroom observations were carried out and interviews were conducted with the teachers and pupils identified as a result of this analysis. Interviews were held with:

a) Teachers of the respective classes.
b) Pupils with ADHD
c) Peers of the pupils with ADHD.

In addition activities necessary for validation of the collected information were carried out. Interviews with other adults related to the particular pupils with ADHD (parents, assistant teachers, head teacher) were held whenever I had the opportunity to talk about the chosen pupils with ADHD.

6.1.1 The Participants

Participants involved in this study were preschool teachers from the preschool programmes run by the Ministry of Education (MOE) Malaysia and their pupils. There were two main reasons for choosing these groups of informants. First, much of the research in ADHD has been largely focused on older children. The need for research within the broad perspective of children with ADHD, in particular those below the age of seven, was identified. Certainly the study of young children with ADHD could help educators in their attempts to carry out early intervention with children with ADHD. With the assumption that the earlier the better in terms of treatments for those children, this study hoped to accomplish an insight on the needs as well as the constraints affecting educational provision for young Malaysian children with symptoms of ADHD.

The second reason is that no previous empirical study on ADHD had taken place with Malaysian children. It is important to produce empirical findings for concurrent situations related to ADHD in Malaysia which could be useful for the MOE, as my sponsor, as a basis for planning and developing appropriate provision for children with ADHD in the country. The selection of the children and their teachers is described the subsequent section.

6.1.2 ADHDC rating data collection and sampling review

Quantitative procedures were the predominant method of data gathering. A group of 20 selected MOE preschool teachers from Kuala Lumpur and another 20 teachers from Kedah were provided with a set of ADHDC forms. They were requested to rate their pupils' behaviour based on characteristics listed in the ADHD checklist (ADHDC) as mentioned in chapter 5.

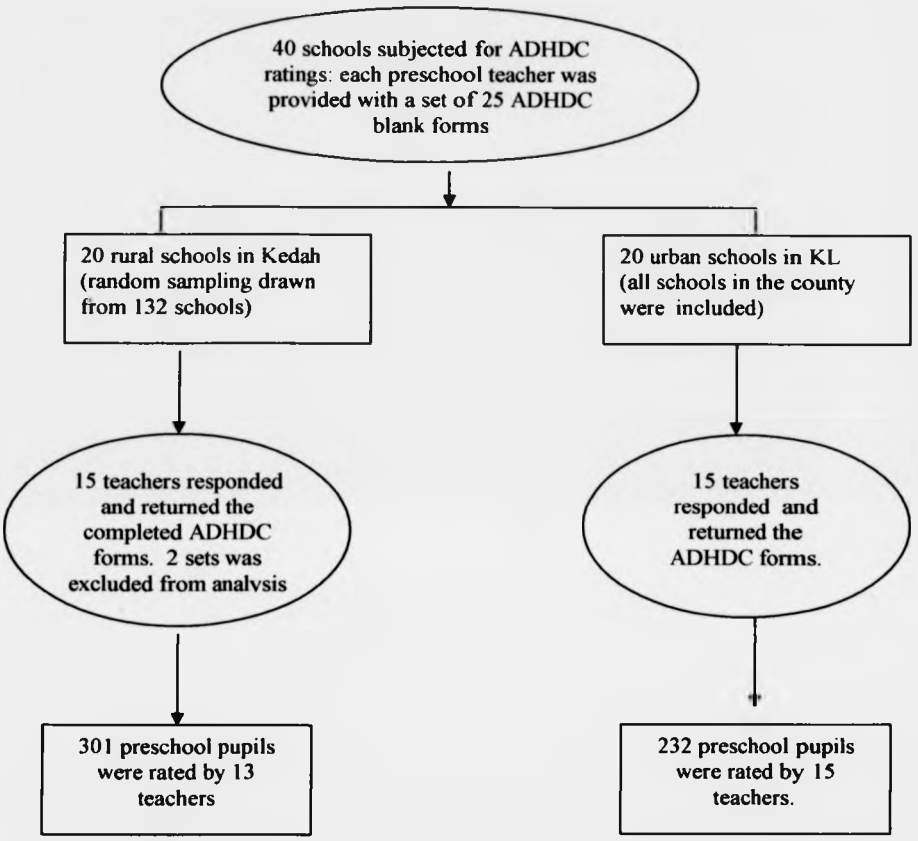
All of the teachers involved in the entire rating procedure were female and were qualified as preschool teachers, trained by the Ministry of Education Malaysia. All the teachers were requested to return the completed ADHDC forms within 3 weeks. However some of them returned the forms far beyond the scheduled time and the prospective ADHD pupils in their class thereby missed the chance to be chosen for case study.

A follow up reminder letter was sent to teachers who had not responded in the given time. One of the teachers returned photocopies of the completed forms with a note that stated that the original forms were already sent to the SED preschool desk officer. It was disclosed later during the interview data collection that a few teachers in Kedah kept a set of photocopies of their completed ADHDC forms as they learnt from their colleague involved in the pilot study about the second rating being requested by the researcher (which was applied for test-retest procedure during the pilot study).

Out of 40 teachers, 30 responded and each of them returned the rated ADHDC forms. From the 30 sets of completed forms, two sets were excluded from analysis. This was because of an obvious discrepancy in the teachers' rating patterns where the behaviours of every pupil in the class were rated with the same score for every item on the ADHDC.

Finally, in total, 533 pupils who were rated by 28 preschool teachers were included in the quantitative data analysis. Fifteen teachers from urban schools were involved in rating 232 pupils and 13 teachers from the rural schools performed the rating on 301 pupils as summarised in figure 6.1.

Figure 6.1: The distribution of preschool pupils in ADHDC rating sample



The number of pupils rated by each teacher varied according to the enrolment in their class. The smallest class enrolment was 8, whereas the biggest class size involved in the procedure was 29. However the preschool class enrolment involved in the rating was generally higher in rural schools as shown in table 6.1. Table 6.1 summarises the enrolment of preschool pupils in 28 classes involved in the rating procedure and the number of pupils rated with 6 or more symptoms in ADHD Hyperactivity/impulsivity and 7 or more in inattentiveness symptoms and those who have both subtype's symptoms.

Table 6.1 The distribution of preschool pupils in the ADHDC rating procedure

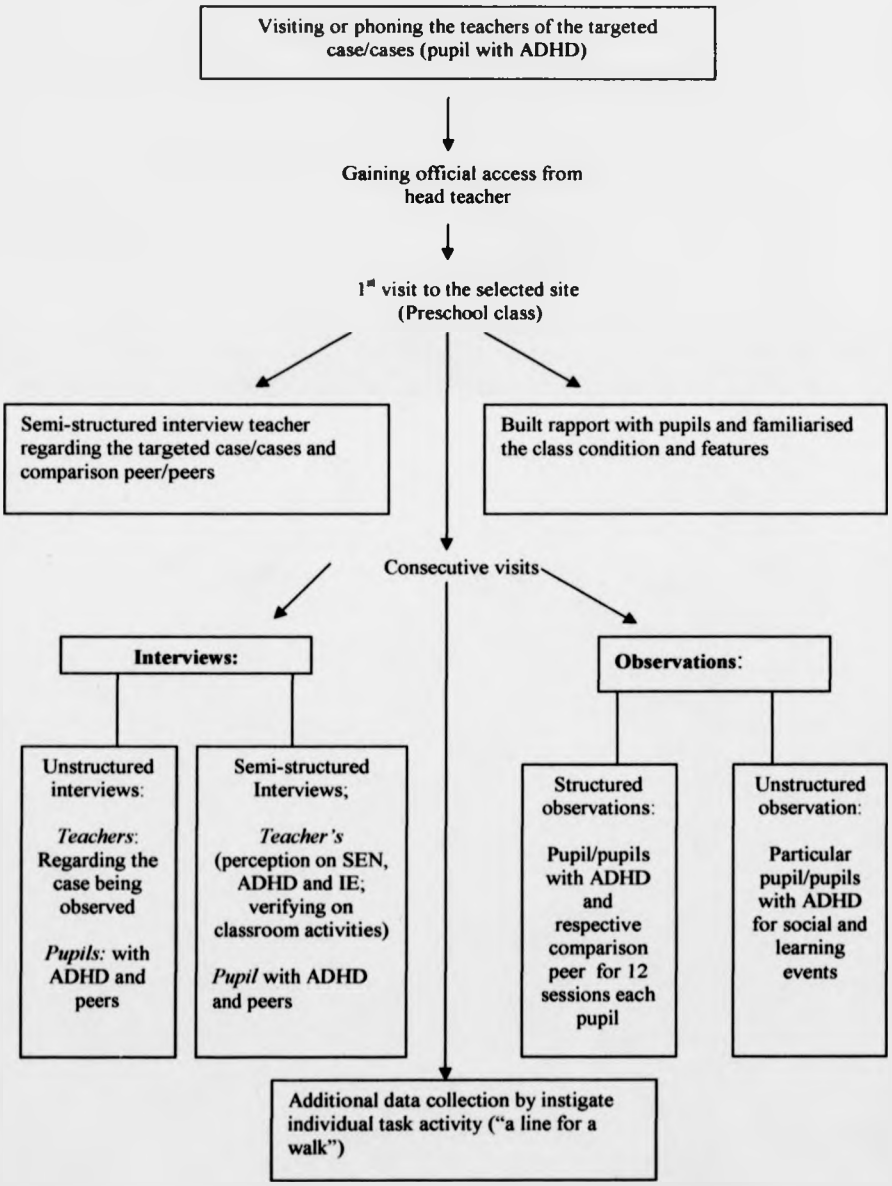
School	Location	Class enrolment	Number of pupils rated with ADHD-like behaviour Subtypes		
			ADHD/C	ADHD/HI	ADHD/IA
School 1	urban	23	1	-	3
School 2	urban	13	-	-	2
School 3	urban	12	-	1	1
School 4	urban	10	-	2	-
School 5	urban	12	-	2	1
School 6	urban	17	1	1	1
School 7	urban	15	-	1	-
School 8	urban	18	-	2	5
School 9	urban	8	-	1	1
School 10	urban	20	1	2	3
School 11	urban	14	-	1	1
School 12	urban	20	1	2	1
School 13	urban	20	-	2	-
School 14	urban	13	1	2	1
School 15	urban	17	-	-	2
School 16	rural	25	2	2	2
School 17	rural	25	-	4	6
School 18	rural	8	-	-	-
School 19	rural	28	-	2	3
School 20	rural	18	-	-	-
School 21	rural	27	-	2	1
School 22	rural	20	-	1	1
School 23	rural	29	-	1	2
School 24	rural	27	1	2	4
School 25	rural	25	-	2	3
School 26	rural	28	-	2	1
School 27	rural	16	-	-	-
School 28	rural	25	1	4	3
TOTAL = **28 schools**		TOTAL = **533 pupils**	9	41	48

Note: inattentive subtype was counted when 7 or more inattentiveness symptoms were rated. Hyperactivity was counted when 6 or more hyperactivity symptoms were rated. Combined subtype was counted when 7 or more inattentive symptoms plus 6 or more hyperactivity were rated.

6.1.3 Interviews and observation data collection review

These data were collected by multi-methods approaches. These approaches were chosen because the focus was on the pupils with ADHD during lesson and classroom activity, which were highly contextual. The physical and social settings were identified of typical schools in urban as well as rural areas where the pupils with ADHD were studying in mainstream classrooms. Figure 6.2 shows the critical paths to each case.

Figure 6.2: Flow chart for choosing the appropriate key informants for observations and interviews procedures



Ten cases were selected for the study and the selection was exclusively drawn based on the ratings done by their teachers on the ADHDC. The highest score on the rating from each school was scrutinised for cases to be studied.

6.1.3.1 The surrounding of case studies: Ten cases in eight schools

Ten pupils with ADHD from three sub-groups were studied by qualitative data collection. The ADHD subtypes' characteristics were used to differentiate the pupils into combined, inattentiveness and hyperactivity subgroups. Ten other pupils were used as comparison peers; one peer for each pupil with ADHD (as mentioned in chapter 5). Out of ten pupils with ADHD, three were from the inattentiveness subtype; three were in the hyperactivity subgroup and four were from combined characteristics subtype.

In terms of location, the schools where the pupil was chosen for case studies possessed the characteristics that are typical for the two respective localities; namely urban and rural. There are other typical features accountable for judgement of inferences to be made beyond the data:

a) The vast majority of the preschool pupils in the programmes run by the Ministry of Education (MOE) Malaysia are from low socio-economic status (SES).

b) The teachers who were teaching the preschool pupils were well trained and they were trained by the MOE (whereas the teachers in private preschools were varied in their qualifications from highly qualified to non-qualified).

c) The lessons in every MOE preschool class were carried out in the presence of a minimum two adults; teachers and assistant teacher.

d) All the activities in teaching and learning for MOE preschool programmes are basically guided by a structured preschool curriculum guidelines and guidebooks.

In these respects, the typicality of the case conditions enables some degree of generalisation. Through this section, knowledge and experience of Malaysian contexts may allow others to judge the representativeness of experience elsewhere. This may

provide initial insight into how all the events in school may limit or enhance the effectiveness of behaviour management for pupils with ADHD.

Eight schools involved in the qualitative studies were from two particularly different locations; urban and rural. Four urban schools were located in the metropolitan city Kuala Lumpur whereas the four rural schools were situated in the rural area at the northern part of peninsular Malaysia, 500 kilometres away from Kuala Lumpur. Schools in Alor Setar (Kedah capital), were excluded from the sampling procedure as the schools are categorised within the urban schools group. Rural pupils were expected to be different from their urban counterparts as they were far from the exposure and influence of urban standard of living that most urban pupils were exposed to. Table 6.2 outlines the particulars of the schools involved in the observations and interviews.

Table 6.2: The eight schools

School	Grade and Location	Pupil enrolment	Teachers	School session	Preschool class and enrolment
SU1	A ; Urban	379	22	Single	1 ; 8
SU2	A ; Urban	839	48	Single	2 ; 40
SU3	A ; Urban	759	42	Double	1 ; 14
SU4	A; Urban	1075	71	Double	2 ; 58
SR1	B; Rural	209	16	Single	1 ; 27
SR2	A; Rural	808	43	Single	1 ; 25
SR3	B; Rural	159	13	Single	1 ; 28
SR4	A; Rural	507	25	Single	1 ; 27

Note: 1. School grade is defined by the pupils' enrolment. School with 500 or more pupils is categorised as grade A (exceptional for SU1)
2. Double sessions: morning and afternoon school sessions are set for different age groups of pupils under the same school administration

In terms of school facilities, seven schools have modern school buildings with the typical pattern of schools built after the 1970s prototype. There was an exceptional condition in SU3 as though the school is run by the MOE, the classroom and the administrative office was located in the purposely renovated room at the ground floor of the residential blocks. The features of each school are discussed in the next section of this chapter.

The MOE preschool programmes are intended for children between the age of five and six years with low socio-economic status. The other common criteria that illustrate and differentiate the MOE preschool programmes are:

1. Classroom infrastructure
2. School uniform
3. Common practice embedded by the curriculum

The classroom facilities in each preschool class of the MOE programmes are designed to accommodate 25 pupils. However the regulation was not strictly followed as the number of pupils in the classes chosen for case studies varied widely. This was due to the number of pupils at preschool age in the area as well as the administrative requirements.

Other factors in consideration of getting place in the MOE preschool classes were family dimensions and the surrounding aspect. Hence, the number of pupils in the classes involved in the observations and interviews varied as shown in Table 6.2. Most of the pupils were born in 1995 (generally in daily terms, referred to as six years old, as the school age was counted from the calendar year of the child's birth).

Most of the MOE preschool programmes are compartmentalized in primary school premises with distinctive facilities designed for younger children. Even though the classrooms and the facilities were located in the school compound, the preschool programmes were under their own direction in terms of children's activities and agenda. In other words, the non-preschool teachers in the schools were less sensitive or interested in preschool events as these teachers were rarely involved with the preschool children. Some schools split up the preschool classes from the primary classes by a fence. In such cases, the school administration considered the separation as preventing access to the preschool facilities by the elder children.

As all the Malaysian primary school pupils have one standardized uniform, the MOE preschool pupils have theirs as well. The preschool attire was different from the primary school uniform to make a differentiation between preschool pupils and the older pupils of the school. Every MOE preschool programme was allocated their chosen preschool uniform. Short sleeve colour T-shirt, printed with the school's name

was one popular type of uniform in the MOE preschools programme. However in Kedah, some district education officers designed a standard preschool uniform for the MOE preschool classes in the district.

The class setting varied between programmes. Some arranged the desks in a square or in row while others arranged the desks in hexagonal shapes. However in all cases the pupils were seated according to the type of activities. The pupils were seated on the floor in a semicircle for least academic activities such as story telling and practising the prayer. Therefore, the class arrangement took into consideration the sufficient space for all pupils sitting on the floor at a time (See appendix 3).

In terms of infrastructure, the other typicality for MOE preschool classrooms is to be attached to a kitchen and a wash room/ toilet. This kitchen is in general provided with basic kitchen facilities. Food and drink options were according to the weekly-rotated appointed menu. In most of the programmes involved in this study, the assistant teacher prepared the food and drink and the pupils ate their meals in the preschool classroom. Though in SU2, since the preschool classrooms and facilities were under renovation, the pupils were provided with the food prepared by the school' s canteen and they went out for recess ten minutes earlier than other pupils.

Removing shoes during lessons in the classroom was one of the other common practices in the MOE preschool programmes. The pupils habitually took off their shoes and placed them on the shoe rack at the corner of the class. This practice was one of the cultural characteristics in most Malaysian preschools, particularly of the lower SES people (which the MOE preschool pupils were from) as they usually practise this at home.

The particularity of each school, the preschool programmes in the respective schools are presented in appendixes 4 and 5.

6.2 The eight schools, the preschool teachers and the classroom settings

This section presents a brief description regarding the particularity of each school and its preschool programme as well as the descriptive accounts of the participants in the respective schools.

6.2.1 The schools

The background of the 8 schools (is illustrated in the appendix 4), shows some demographically varied in terms of history and facilities. The background of SU3 as mentioned above is somehow unlike other schools in terms of school climate and surroundings. Physical environments of the programmes in each school were significantly different as discussed in the next section.

6.2.2 Physical environment of the preschool programmes

The class infrastructure and the facilities in the programmes used for data collection are described in this section to furnish a clear picture of the situation where the study took place. Physical environment is believed to give some impact to learning and social interaction of pupils' with ADHD. See appendix 5 for the significant features of the setting in each programme.

6.2.2.1 Classroom organisation

The physical environment is associated with a more or less conducive learning environment and is a vital factor in providing appropriate environment for pupils with ADHD. The pattern of class organisation and furniture arrangement in the 8 preschool programmes was basically different though the same fundamental principle applied. This aspect of educational element is discussed in relation to pupils with ADHD in part of Chapter 8. The figure of each classroom arrangement is displayed in appendix 3

6.2.3 Preschool teachers

There were eight female qualified preschool teachers involved as the key informants in the present study. Their ages ranged from 23 to 42 years old. They were professionally trained at Diploma level in the various teachers training colleges under the MOE. In terms of teaching experience, it varied widely. The youngest teacher had only 10 months experience whereas the most experienced had 20 years (11 years teaching primary level and nine years teaching preschool children). Seven teachers were married with children of their own. Table 6.3 provides the features of these teachers. Pseudonyms are used in all cases.

Table 6.3: The teachers' background and experiences

School	Name and Age (years)	Experience In teaching	Options (Basic training)	Type of pupil's problems in the class (previously and currently)
SU1	Hana 23	10 months	Pre-school	none
SU2	Irah 29	8 years	Pre-school	Slow learner; Hyperlexia and Speech problem
SU3	Mizam 29	8 years	Pre-school	Speech problem (Malay was a 2nd language for the particular pupil)
SU4	Sali 30	9 years	Pre-school	Down syndrome; Cerebral Palsy ; and Slow learners
SR1	Zuyah 32	10 years	Pre-school	Immaturity; and Slow learners
SR2	Kasma 42	20 years (9 years in pre-school)	Malay Language	SES syndrome; Slow learners; and Behaviour problems
SR3	Tasha 31	8 years	Pre-school	Speech problem (2nd language); Forgetful; Slow learners and Deafness with hyperactivity
SR4	Alin 35	12 years	Pre-school	Behaviours problem; Playfulness; and Slow learners

Note:

1) Only Hana had an exposure to SEN during initial training.

2) The teachers gave the type of problems (SEN) in their class previously or currently without referring to any screening or diagnosis (solely according to their perception and information they had obtained). Most of the information on exceptional children was gained through the mass media.

3) The teachers in rural schools used different spoken Malay discrete accent as well as being dissimilar from the standard accent used in the urban school. The same term may have a different meaning, and in some cases, the same term used has a contradictory meaning in different places.

6.2.4 The uncommon pattern of events

Among the preschool programmes involved in this study only preschool pupils from SU2 were well exposed to visitors from outside the school because this programme has been chosen as one of exemplary MOE preschool programmes in KL. Some other different patterns of events were encountered in each classroom during the data collection. Table 6.4 describes the forms of incidence.

Table 6.4: The uncommon pattern of events encountered in each programme

School	The events
SU1	Observation had been carried out for two weeks in this programme. Extra time was used to refresh the observation skills in terms of setting the time for 'time sampling' in structured observation as well as jotting notes and coding the related events. During the second week of the observations, the teacher was attending an in-service course. The class was supposed to be managed by the assistant teacher but she was absent for two days due to medical reasons. Other teachers then took the class in turn as a relief teacher (during their free time). This phenomenon rarely happened in preschool classes and the researcher has had the opportunity to set eyes on the way the primary school teachers managed young children particularly the pupil with ADHD in the class. Six teachers were involved in the relief sessions. In order to provide enough information for the case being studied, the observations were repeated during the lessons taught by the preschool teacher (out of schedule).
SU2	Breaks for preschool pupils took place in school canteen during the period of preschool kitchen under renovation. As the assistant teachers were not engaged to preparing meals they were more involved in classroom activities (teaching and learning process).
SU3	1) As the class was very close to main road, the traffic congestion (which was typical for the area) caused some clamour to class's climate especially during peak hours. 2) The design of the preschool classroom made easy access by other pupils as the class was connected to the music room by the preschool kitchen. Older pupils (from the afternoon session) frequently sneaked to the preschool class and intruded the facilities such as toys, and books during their music lesson. 3) Other problems included the intrusion of preschool's toilet as well as playground by the public. The preschool teacher suggested (voluntarily

School	The events
	commented) that the situation of the school environment and the class condition, was one of the contributing factors to the poor school reputation and the school become the last choice for most of the prospective parents.
SU4	Breaks for the preschool pupils were carried out in a big group as both classes preschool A and preschool B were merged temporarily for the event and all the adults (teachers and assistant teachers) were included in the group.
SR1	1) Preschool teacher spent more time on clerical tasks outside the class. 2) During the recess time, the older pupils pass the preschool class in order to go to canteen. Some of them hung around the preschool class or even came into the preschool class to join the small pupils especially during the play activities 3) On the third day of observation, while organizing the collected data at the back of the classroom, the researcher was approached by a petty traditional food seller, with a friendly manner he asked the researcher "are you a new teacher here?" and later revealed that he frequently came down to sell home-made cookies to the school's staff
SR2	1) The mother of the boy being studied (school's staff) frequently dropped by in the class for a short while to scrutinize the boy's behaviour. 2) Other common situation was after the school dismissed preschool pupils at 11.30 a.m., some parents, instead of going and get their children, they purposely socially chatted with the teacher, the assistant teacher or the researcher (which was the common obstacle to the process of interviewing the teacher).
SR3	The school canteen used as a temporary classroom was not a conducive place as a learning area as during recess time preschool pupils were exposed to the chaotic surrounding. It was also surrounded by a huge number of flies which originated by the nearby poultry farm.
SR4	1) The assistant teacher was actively involved with managing the behaviour of the pupils with ADHD and was one of the important informants regarding the pupils. 2) The parent of one of the pupils with ADHD being studied was the staff of the school and he frequently visited the preschool class after 11.30 a.m. to discuss the child's affairs with the teacher/assistant teacher (as well as the researcher since he knew the purpose of the study). The situation distracted the process of interviewing the teacher.

School	The events
	The school population is a mix of the Malay community as the people settled in this area were from many part of Malaysia. Some were from the other counties who speak different dialects of the Malay language. They migrated to this area to work as fishermen. Most of them resided at the 'fishermen village', houses projected for fishermen settlement. The settlement was built by the district authority in late 80s. According to the preschool teacher (a local person), traditionally the women in the area worked at home or were full-time housewives. The pattern had changed as currently most of the women in the area were working in the small factories 30 kilometres away, leaving their offspring to be taken care by their extended family. Some leave their baby or children to the neighbour while working, as there was no nursery service in the area. The preschool teacher claimed that this situation has a huge impact on the local culture and consequently the children's development.

6.2.5 Sample: The preschool pupils with ADHD and their comparison peers in the case studies

Ten pupils with ADHD were selected using the rating procedure, nine boys and one girl as showed in table 6.5. The selections were based on the rating outcomes with consideration to comply with the following variables:

- The total score in each class in order to find the highest score in the particular school.
- The total number of item with score 4 or 5 in order to balance the subtypes chosen.
- The location of the school to balance representation of urban and rural.
- The pupils' gender was equally considered to balance total of male and female participants (not fulfilled as there were limited number of girls rated with the characteristics and the girls' school attendance was very poor).
- The pupil's school attendance record was considered in order to get obtainable participants at all the times needed.

In terms of gender, girls were less likely to be rated at higher score (as ADHD). In spite of this, among all the pupils rated, a few girls were in the group of ADHD, but

only one girl was finally selected as a participant. This was due to common irregular attendance record of the pupils rated with high scores. For example in SU4, the initially selected participants were Abdul and Suzi (the girl with ADHD) as Abdul was the highest and Suzi the third highest. Both Abdul and Suzi had poor attendance records. While Suzi was frequently absent, Hafzi as the second highest score in the class was finally selected to replace her. The same case applied to Justi and Rozi. They were chosen after the actual participants with the highest score in the school never turned up in class.

Finally, 10 pupils with ADHD and 10 normative peers were chosen for case studies in the present study. As mentioned earlier in the chapter, the pupils with ADHD were chosen in such a way to represent all the subtypes in ADHD. The score in the ADHD checklist rated by their respective teachers for pupil with ADHD and the comparison pupil were varied. The highest score for ADHD participant was 94 whilst the lowest was 79 whereas the comparison pupils scored between 69 and 37.

The main constraint in choosing the participants for the observations was the pupil's school attendance as most of the pupils rated in the 'ADHD' group had a record of poor attendance. Hence, the initial effort in establishing the correct participants for observation was done by phoning or visiting the respective preschool teacher to obtain the overall figure about the particular pupil and choosing an alternative participant for back up position if the actual participants were not available during the observation period. Ultimately, the alternative participants were utilized in three cases (Justi (SU3), Hafzi (SU4) and Rozi (SR4)).

In most case, observation was carried out two or three months after the ratings were done by their teachers. However, in the case of Narmi and Amin (comparison peer) the ratings were done a day before observation, as they were excluded from the initial rating because the teacher had left out the pupils who were born in 1996. The researcher decided on his suitability as a prospective participant for ADHD after observing his class for two hours and requested the teacher's favour to do the rating for Narmi and Amin. Narmi was appropriate to be a case as his score was 93 which was perfectly fitted for combine subtype of ADHD and furthermore there was a

suitable peer to be chosen as a comparison since Amin was born in the same year and was the same gender. Both were registered for repeating the preschool lessons in the same programme in the year 2002.

The general description of the pupils with ADHD and normative comparison peers who were directly focused on, in the behaviours observations are given in table 6.5:

Table 6.5: Preschool pupils with ADHD and normative comparison peers

Pupil name	Total score (checklist)	Predicted subtype	Age at rating time	Age at observation time
Rizam (boy)	**84**	**Inattentive**	**5.07**	**5.09**
Maza (boy)	53		5.11	6.01
Mahdi (boy)	**80**	**Combined**	**5.08**	**5.10**
Osman (boy)	43		6.02	6.04
Justi (boy)	**76**	**Inattentive**	**6.04**	**6.06**
Aziz (boy)	57		6.04	6.06
Abdul (boy)	**87**	**Combined**	**5.05**	**5.07**
Afli (boy)	37		5.11	6.01
Hafzi (boy)	**85**	**Hyperactivity**	**6.02**	**6.04**
Ali (boy)	37		5.11	6.01
Malik (boy)	**91**	**Hyperactivity**	**5.10**	**6.00**
Fauzi (boy)	62		5.11	6.01
Kefli (boy)	**88**	**Combined**	**6.01**	**6.03**
Atan (boy)	47		6.06	6.08
Bidin (boy)	**79**	**Inattentive**	**5.09**	**5.11**
Fizal (boy)	69		6.06	6.08
Narmi boy)	**93**	**Combined**	**5.05**	**5.05**
Amin (boy)	66		5.01	5.01
Rozi (girl)	**90**	**Hyperactivity**	**5.09**	**5.11**
Dilah (girl)	59		6.05	6.07

Note: Narmi and Amin were born in 1996. Others were born in 1995

6.3 METHODOLOGICAL ISSUES

6.3.1 ADHDC ratings

Generally random sampling was preferred in collecting data in urban and rural preschool programmes. However in Kuala Lumpur (KL), the circumstance did not allow the random sampling as the state only has 20 primary schools with preschool programmes. All the preschool programmes in KL were included in the sampling whereas 20 preschool programmes in Kedah were chosen using random sampling

procedure. Hence the quantitative data used in this study were based on the two different types of sampling procedure.

6.3.2 Interviews

Face-to-face interviews between a researcher and respondent(s) have been widely used in social sciences studies (Fontana and Fray, 2000). It is a process of negotiation where something is learnt by at least one party as a result of the interaction of two or more people who are in direct contact. Things that cannot be directly observed such as views, feeling and opinions of the informants are used as scientific data.

The interviews in this study ranged from semi-structured to unstructured and more likely "purposive conversation" (Burgess, 1984). The interaction which takes place between the researcher and the informant has control elements in terms of the questions asked and the sequence. Generally the interviews were relatively thematic, topic centred or narrative approach to address the intended issues.

The nature of this study called for approaches that were flexible to allow opinions and views to be articulated freely and unexpected issues to be revealed. As an inexperienced interviewer, some agenda was needed as a guide in the situations when the interviewees were not very articulate. My earlier interviews (first few interviews with teachers and pupils) were more formal and halting as the focus was more on the interviewer's concern than the interviewee's. The discussions were foreclosed before the initial response from the interviewee could be expanded. However each interview session taught me a lesson, as reflected on the events and interactions with teachers and pupils. This is the reason why I spent more time to observe and to interview the teacher and pupils in the first school (SU1). Hence, "semi structured interview" in this study, meant that the interaction was led by conversations in which the interviewee felt able to say things more loosely regulated by the agenda and concerns of the interviewer (Fontana and Fray, 2000).

As I became more experienced, I gained more confidence at picking up issues. The skills were developed and were used with the consideration that there is no such a thing as totally "unstructured interview", rather the sessions were necessarily shaped

by predispositions and intentions (Kushner, 1994) which were inevitably outlined by the researcher's values (Kaplan, 1964).

All the interviews were conducted in Malay Language (the National Language). A total of 92 interviews were conducted during the actual fieldwork and the informants were as in Table 6. 6. The main constraints related to this condition were to find the exact equivalent English term to translate the words used by the interviewees for some important phrases and consequently the time used to find it (slow down the research progress as more time is needed for the procedure).

Table 6.6: interviews with the informants

Nature of interview	Interviewees	Recording
Semi-structured : Mode 1	8 Teachers	Audio tape
Semi-structured : Mode 2	8 Teachers	Audio tape
Semi-structured	Pupils with ADHD	Audio tape and field notes
Semi-structured	Peers	Audio tape and field notes
Unstructured	8 Teachers	Audio tape
Unstructured (conversation-like) interview	Assistant teachers	Note jotting after the sessions
Unstructured (conversation-like) interview	Pupils with ADHD	Audio tape and field notes
Unstructured (conversation-like) interview	Peers	Audio tape and field notes
Undirected (Free-flowing and conversation-like) interview	Head teacher, parents, and assistant teachers	Note jotting after the sessions

The use of a tape recorder for interview sessions is widespread (Bogdan and Taylor, 1975; and Burgess, 1990). As the tape recorder I used was not an auto reverse one, some interviews had short gaps since I had to change the side of the cassette every 45 minutes. However, although the semi-structured interviews with teachers were carried out in the respective preschool classrooms, the teachers naturally continued the conversations and were unaffected by their colleagues' or passers-by, probably because their participation in the study was known by other staff. Some of the interviews were carried out after school hours as the lesson was the last period of the day. In addition to the tape recording, field notes were also taken to record data. I

also had numerous unplanned informal conversations with teachers and preschool pupils, which were recorded as field notes.

The issues raised by the teachers were triangulated with the observations made (Denzin, 1989). For example teachers' perceptions about the particular pupils with ADHD were triangulated with what the teachers had said in interviews by putting similar issues/questions in separate interviews with the same teachers. In other words, to negotiate for data clearance the following steps were taken;

- Summarising what has been said by the teachers at the end of each interview.
- After transcribing the tapes, I clarified with the teachers the issues they raised.

However, there were a number of dilemmas which were not managed satisfactorily, such as: how to react to a situation when the teachers said something unpleasant about the pupil/pupils in front of him/them or as in the other situation when the teacher called for activity and the pupils came on for a conversation with the researcher to tell more information regarding the question that had been asked earlier in the day during the informal interview. It is important to summarise here that the interviews were conducted parallel with other form of data collection in this study (not as an isolated process).

6.3.2.1 Interview with teachers

Mode One interviews with teachers were semi-structured, and divided into two parts. Part one addressed the issues on the profile and other information of the child with ADHD chosen for observation as well as the peer chosen for comparison. On the other hand part two of mode one concerned the teachers' conceptions and perceptions pertaining to other aspects related to SEN and ADHD.

'Mode' is used only to aid the reader's attention to the different activities carried out for different sets of data. Actually the activity was an integrated set of events, not discrete modes. For instance a teacher talked about a pupil in part one of mode one, referring to the same pupil as an example in part two of mode one and discussing the teaching of the particular pupil in mode two.

The first part of the mode one interview was carried out on the very first visit to every school. The interview schedule was developed from the information gained through the preliminary questions that requested the teacher to reveal their feelings or what they knew about this child being studied (the child with ADHD). The following questions were developed in the progress of the session. However, the discussion was restricted on the issues related to the chosen pupil with ADHD. The topics for discussion were as follows:

1) Teacher's knowledge and perception on the child's behaviours and social skills.
2) The child's profile on academic achievement and related information.
3) The substantial features of the child's background or family account.

The interview schedule for the second part of the mode one interview with teachers was developed with initial questions, which were formulated based on the research questions and the pilot study findings:

1) Teachers' conceptions of children with Special Educational Need (SEN) as well as children with Attention Deficit Hyperactivity Disorder (ADHD).
2) Teachers' perceptions of their ability to cope in teaching those children.
3) Teachers' perceptions of children with behaviour problems and children with ADHD in their class.
4) Teachers' willingness and support for inclusive education (IE)
5) Teachers' views on the implementation of IE in Malaysia, in particular the barriers and the suggestions.

The initial questions in the interview schedule in the English version are as in appendix 6a. The questions used in the actual fieldwork were modified according to the progress of the response by the interviewee in the sessions. The related probing questions were used to obtain a clear picture of the issues discussed. As the respondents were encouraged to talk about the given issues, the scope of the interview was sometimes broadened but did not deviate from the specified issues.

6.3.2.2 Mode One: Part one

As part one of the Mode one interview with teachers was intended to produce initial information on the children with ADHD and the comparison children, the information

was gathered on the first visit to the class before the observation was carried out. The teachers were very cooperative and keen to reveal what they perceived and the information they knew about the particular child. Further discussion of the teachers' perceptions on the pupils with ADHD is in section 7.7. The interview schedules are in appendix 6a.

Every teacher was interviewed once for this mode except the interview with Mrs Kasma and the discussion was audiotape recorded. In Mrs Kasma's case, a parent of a preschool boy, arrived for an urgent discussion of the boy's problem and interrupted the interview. Mrs Kasma ended the session with her casual comment "we cannot expect any appointments from the clients (parents). Friendliness always wins (the battle)". The interview was done on Thursday and was continued on Monday, as Friday and Saturday are the weekend break in Kedah, while that particular Sunday was a public holiday.

The discussions' duration varied between 25 to 55 minutes. The interview session followed the same pattern and the teachers were encouraged to talk about the particular pupil in her class. The first question was very open and the teachers responded in different ways. Some teachers started with telling the pupil's background and others talked about their problems regarding the pupil's behaviour and one teacher started with her feelings and expectation on the particular pupil.

Other than the pupil's background and behaviour, the questions led the teachers to talk about their perceptions on the strengths of the pupil as well as their expectations. Interestingly, some teachers offered the opportunity for further discussion if needed as they could not instantly recall all about the particular pupil. The opportunity was used to chat with the teacher on various issues, and it took place after the class or in the canteen during the break time. The teachers talked freely of their feelings towards the pupils who exhibited ADHD symptomatic behaviours as the confidentiality of the discussion was assured. One teacher commented:

> " The MOE should have officers visiting the school and listen to the teachers' needs and problems. I never ever received any visitor (officer) who talked and listened about the pupils and my feeling. When you (researcher) finished your study, come back to MOE and suggest this to the top people (in the MOE)". (FN(SU2:9)

The information collected by these interviews was used as an initial step to schedule the informal interviews with the pupils. The teachers' statements were preliminarily used to verify the rating initially given to the particular pupils.

6.3.2.3 Mode one: Part two

As the teachers went through the comfortable interview session in part one, they gained more confidence to cooperate in the research. They willingly revealed the information needed about the pupils, the school, the parents and administrators. One teacher said

> " I think it is precious to tell you what I know because I believe people seldom see the preschool teachers as critically informative as the primary or secondary school teachers. Some schools treat the preschool teachers as a second class teacher " (FN (SR2:4).

On opportunity, the teacher spent more time chatting to researcher after school and one day we were unintentionally locked up in the school hall (temporary classroom) as we quietly chatted and never realised the time passed. The school's guard routinely locked the building at 2.30 pm every day.

Nonetheless with respect to the activities in interview part two, the teachers keenly responding to all questions but some teachers were nervous to respond to the questions regarding their knowledge and perceptions. One teacher honestly revealed her embarrassment for her lack of knowledge about SEN after more than 20 years teaching. In return she asked the researcher to tell her more about SEN.

6.3.2.4 Mode Two

In mode two, informal interviews were carried out with teachers for the purpose of clarifying the events witnessed in the observations. The questions asked were solely based on the contemporary situations and issues. The questions explored the rationale of certain actions or approaches as well as the observed child's behaviour towards the teacher's teaching approaches.

6.3.2.5 Interview with pupils

Most pupils were curious what I was doing on the first day of my visit to every class. However later in the day they got used to having me around, taking notes, using time sampling tape in adjusting the structured observation procedure. Sometimes they asked what the instruments were for and I just explained. Interactions that took place on the first day were useful in such a way that I could built rapport with the pupils. The relationship later provided a platform for indirectly gaining important information regarding the pupil/pupils with ADHD being studied from their peers' perspectives.

Talking to young pupils is a skilled activity normally developed through experience. These specific skills, developed from earlier professional experience, were built during the pilot study as well as the actual fieldwork, and the researcher used many ways to gain information about the pupils' perspective. The interviews with the pupils with ADHD as well as the comparison peers in the class were carried out informally. Chatting started with common issues then gradually directed to the specific questions. As the session was recorded, replaying the tape gave a rewarding satisfaction to the Malaysian preschool pupils because at that age, they hardly ever get the opportunity to use a tape recorder. This was one of the strategies used for the extrovert pupils. In other words, the data gathered at the initial stage of interview with pupils was more of an exploratory nature and gradually became more focused as relevant issues were examined.

Nevertheless, to build rapport and make the introverted pupils talk was not easy work. The 'chatting' strategy plan was difficult to succeed with the introverted pupils and the interviews were modified to 'pretending telephone communication' between the researcher and the pupil using an attractive tape recorder with two microphones.

For example in dealing with Justi, the researcher made a special effort to gain his confidence. First, befriending the pupils in his group in order to get close to him and later in the day giving some personal attention and guidance to his work. In order to get him engaged in individual conversations some 'trial and error' strategies were used. The 'telephone communication strategy' did not secure his confidence. The

only way to make him say something was by chatting to the peer seated next to him and he butted in on and off as the researcher included him in the conversation. To create the momentum in conversation, some general interest subject such as toys were discussed then progressively led to the subjects of concern and alternately focused to him until he gained full confidence to converse individually with the researcher. Unfortunately, the opportunity to discover Justi's perceptions and feeling was not fully explored due to the time constraint as more time was spent on building rapport.

In general, there was no particular pattern in delivering the conversation, as the process was more trial and error. The basic input used in motivating the conversation was the pupil's interest and experience. These inputs were gathered during the observations and the mode 1 teacher's interviews. Hence, the outcomes of these unstructured interviews were cluttered and the task of screening for relevant information was difficult.

Most of the pupils interviewed through the "telephone conversations" were delighted and whenever the opportunity was available they used the tape recorder for chatting with the peer and replaying the tape. They told the researcher how pleased they were to hear their voice in the tape. To make the situation fairly natural, the researcher allowed all the pupils in the class to use the recorder at least once under the supervision of the assistant teacher. In some big classes, the researcher used the other two tape recorders (walkmans) in order to give all the pupils a chance to record their voice.

6.3.3 Classroom observations

Additional information about the behavioural characteristics of the preschool pupils was required in objective measures. All the methods were used with the intention to gain clear insight into the behavioural characteristics of pupils rated in the ADHD group. The classroom observations allowed three types of data to be collected by using two dimensions of task direction in normal teaching, the academic and the 'least academic' lessons (e.g. drawing and singing lesson). In particular, the data collected

concerned the pupils with ADHD, the peers and the learning and teaching behaviours related to them.

The behaviours listed on the coding sheet were scored based on the specific definitions as listed in table 6.7. The detailed analysis on the frequency of behaviours is presented in Chapter 7. The score represented the number of times the pupil engaged to the behaviours rather than the duration of the behaviour occurred.

Table 6.7: The definitions of the behaviours listed for structured observations.

Behaviour	Definition
Day dream	Pleasant thoughts on something else afar from the present situation
Look around	Looked at other than the place suitable for that task such as the book, the teacher's instructions or the focus of the work (recorded when clearly turned the head away and the eyes clearly not directed towards the task.
Out of seat	Once the pupil's buttock broke contact from the flat surface of the seated place (may off task or may still on task).
Intrude others	Forced on other pupils or involved in unwanted situations or meddled with others belongings.
Involved in arguments	Argued with others or purposely teasing others to irritate them and the behaviour produced the response which may lead to squabble, fight or violence.
Fidgeting	A repetitive motion of legs, arms, hands, buttocks or trunk without purpose or tapping the table/objects with pencil/things more than three times
Excess activity	Moved or did something in heightened level of activity
Excited	Shows stirred up feelings
Butting in	Interrupted or interfered with others during discussion or conversations
Play with objects	Touching object in the room such as toys, walls, light switches, or other things in the room (table, chair, pencil, carpet and his own clothes were not included in this group)
Grabbing materials	Took things from others without consensus
Play alone	In circumstances of playing with others or in-group, a pupil chose to play individually (counted during playing time only)
Vocalizing or calling out	Vocal noise or verbal phrase made out loud (e.g. singing, humming, making odd mouth noises or clicking teeth) or answering questions in unacceptable ways

The behaviours listed on the observation coding sheet represented off-task behaviours related to inattentiveness, impulsivity and hyperactivity, and negative social behaviours (as in appendix 2). When time and circumstances permitted, the pupils were interviewed during the lesson while they were doing practical tasks set by the teacher. I asked them whether they liked the activity and appealed for their opinion on how to make the activity more interesting.

Generally the classroom observations were carried out over four to five days in each class involved in the case studies. The information collected was divided into three categories:

- The frequency of specific ADHD-like behaviours listed in the observation-coding sheet. The frequency for exhibited behaviours was counted using time sampling and the focus was only on pupil with ADHD and the comparison peer.
- The social and educational events related to pupils with ADHD
- The impact of the teachers' teaching style on the pupils with ADHD and peers

6.3.4 The statistical analysis of quantitative data

The data from the ADHDC study were analysed using t-test and factor analysis as the data were shown to be appropriate for parametric analysis, for example the size of the sample (533) was of sufficiently large that any potential problems concerning, for example, heterogeneity of variance were not significant. There was therefore justification for the use of t-test for comparison of mean scores, and factor analysis to investigate the construct validity of the scale.

Analysis of the comparison between children with ADHD-like behaviours and the comparison peers as well as within the child in different type of sessions (academic and least academic) with respect to observed behaviours were conducted by the use of the chi-square test. A non-parametric test was required as the data did not meet

the requirements for parametric statistics. Chi-square analysis was appropriate as the dependent measure was frequencies of behaviours.

6.4 CONCLUSION

This chapter informed the related activities and the constraints during the main study. The sampling and the data gathering processes were detailed and displayed in various ways in order to connect the circumstances with the results of data analyses. The following chapter presents the analyses of the ADHDC rating and structured observation data. It highlights the outcome of teachers' rating of their pupils' behaviours based on the items listed in the ADHDC and pupils' observed behaviours.

Chapter 7

ANALYSIS OF QUANTITATIVE DATA

This chapter presents the analysis of the ADHD Checklist (ADHDC) and the structured observation data. Although these data were collected by different methods at different phases, both are quantitative in nature. Hence t-test and Chi-square tests are applied in the analysis to explore and describe the aspects of interest.

7.1 ADHDC DATA ANALYSIS

The main purpose of the (ADHDC) data in this study is to provide a basis for the selection of appropriate participants for the qualitative approach as mentioned in chapter 5 (pupils with Attention Deficit Hyperactivity Disorder (ADHD), and their respective teachers). The second main aim is to generate basic empirical statistics of Malaysian preschool pupils' behaviours with reference to ADHD characteristics. The overall occurrence of ADHD based on the research sample and the cut-offs symptomatic for subtypes of ADHD are interpreted with caution as the data used are from a single informant using a non-clinical sample. Besides, differences in sex and location were tested using t-test. The data are also used for computing the internal reliability of the ADHDC as a screening measure of ADHD for Malaysian children. The first section of this chapter presents the results of the quantitative data analysis pertaining to the second purpose of the quantitative approach. Descriptive statistics are used to illustrate the rating outcome (pupils' behaviour rated by their teachers) pertaining to ADHD cases. The scores from the ADHDC are used to examine the total score of the scale as well as the scores for the subscales of Inattentiveness and Hyperactivity. The analysis was carried out on the basis of the predicted scales before the factor analysis was executed. The reliability measures taken for the ADHDC are discussed based on two different sets of data: data from the pilot study used to compute the test-retest reliability and data from actual fieldwork which were used for internal reliability. The second part of the section

presents the results on the rating distribution concerning the factors derived using factor analysis.

7.1.1 The Item Scores of the ADHD Checklist (ADHDC)

The distributions of the scores of each item in the ADHDC closely approximate to normal distributions except for items 10 and 23. The same pattern applies to the distribution of the total score of ADHDC. Furthermore the same pattern emerged for the total raw scores for subscale Inattentiveness and subscale Hyperactivity (see appendix 7.1).

The mean and standard deviation of each item for overall scores are summarised as in table 7.1. The ranges for mean scores of the items are between 3.01 and 1.95. The highest mean score was for item 22 (mean = 3.01) and item 23 was the lowest (mean = 1.95). The standard deviation for the items varied with the highest at 1.13 (item 15) and the lowest was 0.81 (item 2).

Table 7.1: Mean, Standard Deviation for each items of ADHDC

Item	Mean	Std Deviation
1. Give close attention to details *	2.53	.95
2. Has difficulty sustaining attention in task or play activities	2.78	.81
3. Seems to listen carefully when spoken to directly *	2.55	.80
4. Follows through on instructions and finishes work in time *	2.62	.95
5. Has difficulty in organising task and activities	2.74	.98
6. Likes to be engaged in tasks that require sustained mental effort *	2.68	.97
7. Loses things necessary for task or activities	2.32	.93
8. Is easily distracted/inattentive	2.86	.95
9. Is forgetful in daily activities/things s/he has already learned	2.68	.92
10. Fidgets with hands or feet or squirms in seat	2.16	1.02
11. Stay in seat in classroom or in other situation in which remaining seated is expected *	2.88	1.11
12. Runs about or climbs excessively (in situations in which it is inappropriate)	2.04	.96
13. Has difficulty playing or engaging in leisure activity quietly	2.62	1.00
14. Is "on the go" or act as if "driven by a motor"	2.63	1.08
15. Talks excessively	2.61	1.13
16. Blurts out answers before questions have been completed	2.38	1.04
17. Has difficulty awaiting turn in groups	2.55	.96
18. Interrupts or intrudes on others	2.39	.99
19. Shifts from one uncompleted activity to another and fails to finish work he/she starts	2.44	.96
20. Is careful in avoiding mistake in schoolwork *	2.62	1.00
21. Long attention span *	2.85	.96
22. Only pay attention to things he/she is really interested in	3.01	.82
23. Temper outburst: explosive, unpredictable behaviour	1.95	.98
24. Obedient *	2.34	1.01
25. Disturbs other children	2.16	1.00

N= 533

* is the item presented in negative form and the mean and standard deviation for the particular items are represent based on the reverse score.

7.1.1.1 ADHDC item scores with reference to gender

A comparison of means for item scores by gender shows that boys scored significantly higher on 21 of the 25 items. Taking 0.05 as the significance level, only items 11, 15, 16 and 22 (see table 7.2) show no statistically significant differences between boys and girls.

Table 7.2: Mean, Standard Deviation and t value for each items according to gender

Item	Boys		Girls		t- value	p- value
	Mean	Std Dev	Mean	Std Dev		
1	2.70	.96	2.36	.90	4.235	.001
2	2.91	.83	2.65	.77	3.717	.001
3	2.70	.80	2.40	.78	4.4432	.001
4	2.81	.97	2.41	.90	4.967	.001
5	2.94	.96	2.54	.96	4.842	.001
6	2.87	.99	2.47	.91	4.795	.001
7	2.46	.97	2.17	.85	3.648	.001
8	3.04	.97	2.67	.90	4.575	.001
9	2.85	.92	2.51	.88	4.246	.001
10	2.39	1.11	1.91	.86	5.604	.001
11	**2.82**	**1.04**	**2.94**	**1.18**	**1.188**	**.235**
12	2.32	1.00	1.74	.81	7.334	.001
13	2.73	.99	2.51	1.00	2.519	**.012**
14	2.89	1.11	2.36	.98	5.833	.001
15	**2.70**	**1.12**	**2.52**	**1.14**	**1.842**	**.066**
16	**2.44**	**1.06**	**2.32**	**1.02**	**1.336**	**.182**
17	2.65	.94	2.43	.96	2.639	.009
18	2.58	1.03	2.19	.92	4.634	.001
19	2.59	.96	2.28	.94	3.764	.001
20	2.78	1.01	2.45	.96	3.778	.001
21	3.01	.99	2.68	.91	4.007	.001
22	**3.00**	**.87**	**3.02**	**.78**	**.216**	**.829**
23	2.10	1.06	1.78	.86	3.812	.001
24	2.49	.97	2.17	1.02	3.686	.001
25	2.44	1.00	1.88	.93	6.680	.001
	X= 261		Y= 250			

N= 531

7.1.1.2 ADHDC items scores with reference to location

In terms of location, there were no statistically significant differences between the mean scores of children in urban and rural schools on 17 of the 25 items. Only eight of the 25 items showed a significant difference with respect to location, namely items

11, 17, 23 and 24 at p<0.001, items 6 and 7 at p<0.01, item 20 (p= .012) and item 10 (p= .021) (see table 7.3). In all these cases the children in rural schools have higher mean rankings indicating higher level of inattentiveness and hyperactivity.

Table 7.3: Mean, Standard Deviation and t value for each items according to location

Item	Urban pupils		Rural pupils		t- value	p- value
	Mean	Std Dev	Mean	Std Dev		
1	2.54	.90	2.52	.98	.220	.826
2	2.71	.91	2.84	.73	1.731	.084
3	2.56	.82	2.54	.79	.220	.826
4	2.60	.93	2.63	.97	.385	.701
5	2.68	.97	2.80	.99	1.410	.159
6	**2.53**	**.98**	**2.78**	**.95**	**2.966**	**.003**
7	**2.20**	**.93**	**2.41**	**.91**	**2.602**	**.010**
8	2.84	.98	2.88	.94	.387	.699
9	2.64	1.01	2.72	.84	1.029	.304
10	**2.04**	**1.11**	**2.25**	**.94**	**2.313**	**.021**
11	**2.41**	**1.05**	**3.24**	**1.01**	**9.175**	**.001**
12	2.03	1.00	2.05	.92	.246	.806
13	2.55	1.03	2.68	.98	1.530	.127
14	2.70	1.05	2.58	1.09	1.242	.215
15	2.66	1.06	2.57	1.19	.856	.392
16	2.28	1.02	2.46	1.05	1.959	.051
17	**2.38**	**.99**	**2.68**	**.91**	**3.667**	**.001**
18	2.32	.97	2.44	1.01	1.330	.184
19	2.40	1.06	2.47	.88	.787	.431
20	**2.50**	**.95**	**2.71**	**1.02**	**2.520**	**.012**
21	2.84	.98	2.87	.95	.361	.718
22	3.00	.75	3.01	.87	.080	.936
23	**1.73**	**.91**	**2.12**	**1.00**	**4.617**	**.001**
24	**2.16**	**.85**	**2.48**	**1.09**	**3.798**	**.001**
25	2.21	.98	2.13	1.02	.968	.333
	X = 232		Y= 301			

N= 533

7.1.2 Total and subscales scores

The total score and the Inattentiveness and Hyperactivity Subscales scores were each computed from the number of items rated at points 4 and 5. Table 7.4 shows the percentage of pupils scoring a total number of items with a rating of 4 or 5. The percentage of pupils with scores 4 and 5 on more than 10 items is 8.7%.

Table 7.4: Percentage of pupils scoring at points 4 or 5 for Total Score

Total Items (score 4&5)	%		Total Items (score 4&5)	%
0	10.7		11	2.4
1	16.1		12	1.7
2	16.1		13	1.7
3	11.8		14	0.8
4	6.4		15	0.2
5	9.4		16	0.9
6	6.4		17	0.2
7	3.9		18	0.4
8	4.1		19	0.2
9	2.6		22	0.2
10	3.8			

The incidence of ADHD, internationally is conservatively estimated at between 3-5% among children (American Psychiatric Association, 1994), and between 5% -10 % of school-age children (Buitelaar, 2002).

With consideration of 10 % of the sample as an indicator of ADHD characteristics (score 4 and 5), the cut-off for the items for Total Score was chosen as 10 and above. Consequently, the cut-off point for the score to be considered as having ADHD is when the total of choice 4 and 5 in the rating is more than 9. In table 7.4, 12.5% of the pupils score at points 4 or 5 on more than nine items.

Table 7.5 and Table 7.6 indicate that 11.0 % of the sample scores at points 4 and 5 on more than 6 items on the Inattentiveness items whereas 9.5% score at points 4 and 5 on more than 5 items of Hyperactivity items. Accordingly, the cut-off point for the score to be considered as having ADHD- Inattentive is when the total of choice 4 and 5 in the rating is more than 6 and ADHD-Hyperactivity is when the total of choice 4 and 5 in the rating is more than 5.

Table 7.5: Percentage of pupils scoring at point 4 or 5 for the Inattentiveness items

Total item score 4& 5 (inattentive)	%		Total item score 4& 5 (inattentive)	%
0	30.0		7	4.5
1	25.3		8	2.6
2	11.4		9	2.4
3	8.1		10	0.9
4	5.6		11	0.4
5	5.1		12	0.2
6	3.4			

Table 7.6: Percentage of pupils scoring at point 4 or 5 for the hyperactivity items

Total item score 4 & 5 (hyperactivity)	%		Total item score 4 & 5 (hyperactivity)	%
0	23.6		7	2.4
1	31.9		8	1.9
2	17.1		9	0.6
3	9.0		10	0.8
4	6.9		11	0.2
5	2.1		13	0.2
6	3.4			

With the chosen cut-off points, Table 7.5 and Table 7.6 show that 11.0% of the sample had ADHD Inattentiveness characteristics and 9.5% of the pupils were rated by their teachers as having Hyperactivity characteristics.

7.1.2.1 Comparison of Total and Subscale scores with reference to gender

Based on the above cut-off points, boys were rated significantly higher ($p < .001$) on mean Total Score, mean total score of ranking 4 or 5, and on the mean Inattentive and Hyperactivity subscales (see Table 7.7).

Table 7.7: ADHD behaviour and gender of the sample

Item	Boys		Girls		t- value	p- value
	Mean	Std Dev	Mean	Std Dev		
Total score	67.52	12.11	59.69	11.05	7.62	.001
Total of score 4 &5	5.35	4.36	3.22	3.01	6.58	.001
Total Inattentiveness score	2.96	2.92	1.62	2.14	6.05	.001
Total Hyperactivity score	2.39	2.48	1.60	1.75	4.28	.001
N	273		260			

7.1.2.2 Comparison of Total and Subscale scores with reference to location

Table 7.8 indicates that the means for the rural sample were statistically significantly higher than the urban sample for total score ($t = -2.96$, $p = .003$), total of score 4 and 5 ($t = -2.21$, $p = .027$) and the Hyperactivity subscale ($t = -2.58$, $p = .01$). There was no statistically significant difference in the Inattentiveness subscale.

Table 7.8: ADHD behaviour and location of the sample

	Urban pupils		Rural pupils		t- value	p- value
	Mean	Std Dev	Mean	Std Dev		
Total score	61.81	13.55	65.12	10.94	-2.96	.003
Total of score 4 &5	3.89	4.10	4.64	3.73	-2.21	.027
Total Inattentive score	2.16	2.69	2.42	2.62	-1.13	.256
Total hyperactivity score	1.73	2.24	2.22	2.12	-2.58	.010
N	232		301			

7.1.3 ADHDC reliability

The consistency of the ADHDC was calculated by two separate procedures; internal consistency using Cronbach's alpha (from the data of the actual study) and over time (test-retest using data collected during the pilot study).

7.1.3.1 Internal reliability

The internal consistency of the ADHDC was measured by using Cronbach's alpha. The internal consistency of the ADHDC was found to be satisfactory (Cronbach's alpha = 0.88, N=531). The two subscales were also had satisfactory internal consistency (Cronbach's alpha = 0.86 for Inattentiveness and 0.83 for Hyperactivity) as in table 7.9.

Table 7.9: Internal consistency for ADHDC Total score and the inattentive and hyperactivity subscales

	Total ADHDC	**Subscale of inattentiveness**	**Subscale of hyperactivity**
N of Cases	531	531	531
N of items	25	12	13
Alpha	0.88	0.86	0.83

7.1.3.2 Test-retest stability of the ADHDC

Test retest reliability is the stability of test scores of an individual child when the same test is administered on separate occasions. Test-retest analysis was carried out during the pilot study and the scores on the ratings were examined to indicate the degree to which the same teacher provides a stable score over a two weeks interval. This period was chosen as pupils' behaviour is not expected to change significantly over this time.

Table 7.10 shows that the highest value for the correlation coefficient (Pearson's r) is .98 (item 19) and the lowest is .62 (item 24). In particular, eleven items were of moderate reliability (between .50 to .80) and the other fourteen items were in the high range (above .80) (Cohen, 1988).

Table 7.10: Test-retest stability for item 1 to item 25 (Pearson's r)

Item	r		Item	r
Item 1	.82		Item 14	.90
Item 2	.77		Item 15	.84
Item 3	.91		Item 16	.91
Item 4	.93		Item 17	.90
Item 5	.70		Item 18	.83
Item 6	.69		Item 19	.98
Item 7	.92		Item 20	.89
Item 8	.66		Item 21	.80
Item 9	.74		Item 22	.74
Item 10	.78		Item 23	.69
Item 11	.65		Item 24	.62
Item 12	.86		Item 25	.82
Item 13	.92			

N=51 p<. 001 in all cases

The value for the correlation coefficient of the total score, total score rated 4 and 5, and scores for Inattentiveness and Hyperactivity subscales are in the high range as in table 7.11.

Table 7.11: Test-retest stability for total score, score 4 or 5 for inattentive subscale and score 4 or 5 for hyperactivity subscale (Pearson's r)

Item	r
Total score of 25 items	.93
Total score 4 or 5	.91
Total score 4 or 5 for inattentive subscale	.89
Total score 4 or 5 for hyperactivity subscale	.92

N=51 p<0.001 in all cases

To assess stability in terms of the magnitude of differences in scale scores, t tests of test 1 versus test 2 were computed. Only items 4, 5, 7, 9 and 17 were not stable as there was a statistically significant difference ($p < .05$) between the mean of test 1 compared with the mean of the test 2 (see Table 7.12). It is believed that this was due to random

error results, although there is a consistent pattern of the test 2 scores being higher on 19 items, including the time where the difference was statistically significant. In addition, item 10 was close to being considered significant (p = .051).

Table 7.12: Mean score, standard deviation and comparison of mean score for test 1 and test2 for all items

Items	Mean test1	SD test 1	Mean test 2	SD test 2	t-value	p-value
Item 1	2.47	1.01	2.45	.94	.240	.81
Item 2	2.51	.88	2.59	.85	-.942	.35
Item 3	2.33	.82	2.29	.78	.814	.42
Item 4	2.49	.95	2.65	1.02	-3.050	**.004**
Item 5	2.67	.93	2.98	.97	-3.050	**.004**
Item 6	2.47	.86	2.41	.92	.596	.55
Item 7	1.84	.83	1.96	.82	-2.582	**.013**
Item 8	2.67	.93	2.71	.94	-.362	.72
Item 9	2.55	1.01	2.76	1.03	-2.111	**.040**
Item 10	1.49	.64	1.63	.77	-1.998	**.051**
Item 11	1.98	.86	2.06	.90	-.753	.46
Item 12	1.84	.86	1.82	.89	.299	.77
Item 13	2.08	.89	2.16	.99	-1.429	.16
Item 14	1.67	.89	1.75	.89	-1.429	.16
Item 15	1.98	.91	1.88	.86	1.400	.17
Item 16	2.00	.92	1.92	.89	1.429	.16
Item 17	2.41	.92	2.55	1.03	-2.187	**.033**
Item 18	2.14	.89	2.18	.99	-.496	.62
Item 19	2.18	.93	2.22	.94	-1.429	.16
Item 20	2.27	1.04	2.35	1.13	-1.071	.29
Item 21	2.69	.99	2.76	1.07	-.850	.40
Item 22	2.69	.81	2.73	.92	-.444	.66
Item 23	1.54	.73	1.62	.78	-9.42	.35
Item 24	2.00	.87	2.12	1.03	-1.000	.32
Item 25	1.82	.93	1.90	.94	-1.000	.32

N=51

Note, The items with p-value in bold are the items with low stability

7.1.4 Factor analysis of the ADHDC -Scale scores

The ADHDC ratings are based on the DSM-IV criteria for ADHD. The bidimensional structure of the diagnostic criteria list was used for implied subscales (for screening purposes of pupils with ADHD subtypes in the study).

Factor analysis was conducted to provide information about construct validity of ADHDC including whether the hypothesised bidimensional structure of ADHDC would be supported, to examine the relationships between the items of the ADHD checklist, and to explore the relationships between the scale's factor structures according to DSM-IV criteria. A principal component analysis followed by Varimax rotation was used for factors with eigenvalues greater than 1. Table 7.13 shows the matrix of factor loadings.

Table 7.13: Varimax rotation factor pattern

Items	F1	Items	F2	Items	F3	Item	F4	Item	F5
Item 1	.79	Item 12	.56	Item 2	.74	Item 11	.84	Item 22	.81
Item 3	.76	Item 14	.72	Item 7	.72			***Item 13***	***.36***
Item 4	.82	Item 15	.80	Item 8	.73				
Item 5	.86	Item 16	.73	Item 9	.59				
Item 6	.82	Item 17	.72						
Item 20	.69	Item 18	.84						
Item 21	.71	Item 19	.51						
Item 24	.52	Item 23	.62						
Item 10	***.39***	Item 25	.76						

The varimax analysis produced a five factor solution (see Table 7.13). A cut-off of .40 was taken to determine significant loading of items on each factor. In addition, factor loadings very close to the cut off are included in the Table 6.13 in italics. The items loading on F1 and F3 are associated with Inattentiveness characteristics whereas items in F2, F4 and F5 are related to Hyperactivity characteristics.

Nevertheless, at the chosen cut-off point, items 10 and 13 do not load on any of the 5 factors. Precisely, the items 10 and 13 load at slightly below cut-off point on different factors (item 10 loaded on F1 at .39 whereas item 13 loaded on F5 at .36). Nevertheless, despite not reaching significant loading, each of these items and all except one of those with significant loadings, load on logically appropriate factors. However item 24 which was intended to be an item measuring Inattentiveness, loads on F1 instead of F2.

Overall, under the chosen cut off point the factors have a relatively clear pattern, as follows:

F1: all the items are presented in the negative form of statements for inattentive characteristic.

F3: all items are positive statements about inattentive characteristics.

F5: hyperactivity characteristic

F2: all items are positive statements for hyperactivity characteristics.

F4: the item is a negative statement for hyperactivity characteristic

The statements for items 1 – 18 were adapted from ADHD Rating Scale –IV by DuPaul et al. (1998) and closely reflected the DSM-IV criteria for ADHD.

Additional exploratory analysis using the same procedure was run where the data were split according to gender. The factor loadings did not change substantially in structure except for item 10 and item 13 (which loaded below cut-off value for the total sample). Item 10 had a significant loading for girls (F3, Table 7.15) while item 13 had a significant loadings for both boys (F5, Table 14) and girls (F4, table 7.15)

Table 7.14: Varimax rotation factor pattern for boys

Items	F1	Items	F2	Items	F3	Item	F4	Item	F5
Item 1	.78	Item 12	.61	Item 11	.83	Item 22	.88	**Item 13**	**.81**
Item 3	.75	Item 14	.75	Item 24	.49				
Item 4	.83	Item 15	.76	*Item 7*	.39				
Item 5	.88	Item 16	.68	*Item 9*	.37				
Item 6	.82	Item 17	.64						
Item 20	.63	Item 18	.85						
Item 21	.75	Item 19	.52						
		Item 23	.60						
		Item 25	.78						

Table 7.15: Varimax rotation factor pattern for girls

Items	F1	Items	F2	Items	F3	Item	F4	Item	F5
Item 1	.83	Item 12	.40	**Item 10**	**.70**	**Item 13**	**.62**	Item 11	.92
Item 2	*.39*	Item 14	.63	Item 12	.61	Item 22	.77		
Item 3	.74	Item 15	.85	Item 19	.50				
Item 4	.79	Item 16	.76						
Item 5	.82	Item 17	.73						
Item 6	.81	Item 18	.82						
Item 8	.43	Item 19	.40						
Item 9	.45	Item 23	.54						
Item 20	.72	Item 24	.43						
Item 21	.58	Item 25	.73						

7.1.5 Summary for ADHDC data analysis

Using the five point Likert scale in ADHDC, any pupil with a score on the ADHDC's item at the point 4 or 5 was considered as having a symptom whereas the score 1, 2, or 3 considered as indicating an absence of a symptom. Cut-offs were chosen for each scale to define approximately 10 % of the children. As a result children needed to

score above 6 on the inattentiveness scale and above 5 on the hyperactivity/impulsivity scale to be considered ADHD/IA and ADHD/HI respectively. These cut-offs are similar to the DSM-IV categorization which specifies 6 out of 9 symptoms in each case. Factor analyses show that the ADHDC items could be divided into 2 structures which represent characteristics for inattentiveness and hyperactivity/impulsivity. There was a high degree of factor structure whether the sample comprised boys, girls or both groups.

7.2 ANALYSIS OF STRUCTURED OBSERVATION DATA

The main analysis of structured observation data was conducted in two steps. The first step was to examine the potential differences within each case, whether the targeted behaviour engaged by pupils with ADHD was influence by the type of the sessions (academic and least academic sessions). The second step examined the differences between the pupils with ADHD and their respective comparison peers and was analysed according the listed behaviours. Age are used as a control variable in all analysis.

The ages of the pupils with ADHD (the sample) for the observation (second part of data collection) in the present study ranged between five years five months to six years six months. The age gap between the pupils with ADHD and the comparison peers chosen for each case varied between no gap and nine months. The description of the pupils with ADHD and normative comparison peers are given in table 7.16.

Table 7.16: Preschool pupils with ADHD and normative comparison peers involved in observations

Pupils' name	Total score on 25 items of ADHDC	Total item score 4 or 5 **I** = inattentive **H**= hyperactivity	Considered subtype	Age at rating time	Age (at observation time)
Rizam	84	15 items, **(11 I + 5 H)**	Inattentive	5.07	5.09
Maza	53	3 items, **(2 I + 1 H)**		5.11	6.01
Mahdi	80	17 items, **(10 I + 7 H)**	Combined	5.08	5.10
Osman	43	2 items, **(1 I + 1 H)**		6.02	6.04
Justi	76	11 items, **(8 I + 3 H)**	Inattentive	6.04	6.06
Aziz	57	0 items		6.04	6.06
Abdul	87	15 items, **(9 I + 6 H)**	Combined	5.05	5.07
Afli	37	0 items		5.11	6.01
Hafzi	85	9 items, **(2 I + 7 H)**	Hyperactivity	6.02	6.04
Ali	37	0 items		5.11	6.01
Malik	91	12 items, **(3 I + 9 H)**	Hyperactivity	5.10	6.00
Fauzi	62	1 item, **(1 I + 0 H)**		5.11	6.01
Kefli	88	14 items, **(7 I + 7 H)**	Combined	6.01	6.03
Atan	47	0 items		6.06	6.08
Bidin	79	12 item, **(9 I + 3 H)**	Inattentive	5.09	5.11
Fizal	69	2 items, **(1 I + 1 H)**		6.06	6.08
Narmi	93	18 items, **(10 I + 8 H)**	Combined	5.05	5.05
Amin	66	0 items		5.01	5.01
Rozi	90	12 items, **(5 I + 7 H)**	Hyperactivity	5.09	5.11
Dilah	59	2 items, **(1 I + 1 H)**		6.05	6.07

Note Narmi and his comparison peer Amin were born in 1996 while others were born in 1995.

7.2.1 The comparison between academic and least academic lessons within a case (according to cases)

The structured observations were carried out in standardised format using time sampling as mentioned in chapter five. It was done for twelve sessions of ten minutes each for every case. Six of the sessions were carried out during the academic lessons and the other six during least academic lessons. The frequencies of the targeted behaviours were grouped in academic and least academic sessions and the subtotals are listed in the table in each case. The Chi-square test was used to compare the frequencies between the pupils with ADHD. The comparisons between pupils with ADHD and their

comparison peers are discussed in the next subsection. The descriptive statistics on targeted behaviours for each pupil with ADHD are presented in tables consisted of frequencies for individual behaviour subtotalled according to sessions: academic and least academic. The total frequencies of each behaviour are counted from the sum of the frequency of the particular behaviour in both sessions. The figures in bold in each table in this subsection are the frequency used in comparing the behaviour between academic and least academic sessions. Pseudonyms are used in the description.

7.2.1.1 Structured observations for Rizam

The 12 sessions of structured observations were carried out on four different days. The frequency of the targeted behaviours varied as shown in table 7.17 below.

Table 7.17: The subtotal of the frequency of the observed behaviours during the academic and least academic sessions for Rizam

Behaviour	Six Academic sessions	Six Least Academic sessions	Total of the frequency
Day dreams	**23**	**29**	52
Look around	**37**	**39**	76
Out of seat	**32**	**24**	56
Intrude others	7	4	11
Involved in argument	1	1	2
Fidgeting	3	2	5
Excess activity	2	2	4
Exited	4	2	6
Butting in	1	1	2
Play with objects	3	NA	3
Grabbing material	1	0	1
Play alone	NA	1	
Vocalizing/calling out	**16**	**27**	36
TOTAL	**129**	**132**	261

Some behaviour occurred more in academic sessions while others were the opposite. The chi-square values indicate that there is a difference between academic lessons and least academic lessons in Rizam's calling out behaviour; $\chi 2$ (1)=4.500; $p<0.05$. However the chi-square value for other behaviours as well as behaviour in general

indicate no differences between the sessions (Day dreaming, $\chi 2$ (1)=0.692 p >0.05; Looking around: $\chi 2$ (1)=0.052 p>0.05; Out of seat: $\chi 2$ (1)=0.571 p>0.05: TOTAL, χ 2 (1)= 0.031 p>0.05).

Therefore, it seems that Rizam's day dreaming, looking around, and out of seat behaviours are not affected by the formality of the session. Whether the session is academic or least academic, he seemed to be behaving more or less in a similar manner. On the other hand, his calling out behaviour seemed to be affected by the type of session being significantly more frequent in least academic session.

7.2.1.2 Structured observations for Mahdi

Some targeted behaviours were very different in frequency count between academic sessions and least academic sessions. Consequently the frequency of the overall (targeted) observed behaviours was obviously high during the academic (242) lesson compared to least academic lessons (151) as presented in table 7.18 below.

The Chi-square value indicates that in general, Mahdi's behaviours are affected by the type of the lessons (total; ($\chi 2$ (1)= 26.5; p <0.001). There are statistically significant differences observed in looking around and out of seat behaviours as well (looking around; ($\chi 2$ (1)= 127.6; p<0.001 and out of seat ($\chi 2$ (1)= 7.716; p<0.05) between academic and least academic lessons.

Nevertheless the chi-square values for other behaviours indicate that no statistically significant differences were observed between the academic and least academic lessons (The Day dreaming ($\chi 2$ (1)= 0.342 p>0.05; Interfering with others ($\chi 2$ (1)= 0.182 p>0.05; Fidgeting ($\chi 2$ (1)= 0.125 p>0.05

Table 7.18: The subtotal of the frequency for the observed behaviour during the academic and least academic sessions for Mahdi

Behaviour	Six Academic sessions	Six Least Academic sessions	Total of the frequency
Day dreams	**39**	**34**	73
Look around	**95**	**52**	147
Out of seat	**53**	**28**	81
Intrude others	**10**	**12**	22
Involved in argument	2	1	3
Fidgeting	**15**	**17**	32
Excess activity	0	1	1
Excited	0	0	0
Butting in	10	2	12
Play with objects	15	NA	15
Grabbing material	0	0	0
Play alone	NA	2	2
Vocalizing/calling out	3	0	3
Total	**242**	**151**	393

Therefore it seems that Mahdi's looking around, and out of seat behaviour as well as general behaviours are affected by the formality of the session. The behaviour occurred more frequent during the academic lessons. On the other hand he seemed to be behaving more or less in a similar manner for other categories of behaviours.

7.2.1.3 Structured observations for Justi

Out of thirteen, only seven targeted behaviours occurred during the structured observations. The frequency of the behaviours was varied as shows in table 7.19. The chi-square value indicates that there are no statistically significant differences observed between the behaviours in academic and least academic lessons (Day dreaming ($\chi 2$ (1)= 2.469; $p>0.05$, Looking around ($\chi 2$ (1)= 0.127 ; $p>0.05$, Out of seat ($\chi 2$ (1)= 0.015; $p>0.05$, Fidgeting ($\chi 2$ (1)= 2.00; $p>0.05$, Total ($\chi 2$ (1)= 0.012; $p>0.05$).

Table 7.19: The subtotal of the frequency for the observed behaviour during the academic and least academic sessions for Justi

Behaviour	Six Academic sessions	Six Least Academic sessions	Total of the frequency
Day dreams	**19**	**30**	49
Look around	**37**	**34**	71
Out of seat	**33**	**34**	67
Intrude others	1	2	3
Involved in argument	1	1	2
Fidgeting	**12**	**6**	18
Excess activity	0	0	0
Excited	0	0	0
Butting in	0	0	0
Play with objects	3	NA	3
Grabbing materials	0	0	0
Play alone	NA	0	0
Vocalizing/calling out	0	0	0
TOTAL	**106**	**107**	213

Therefore it appears that Justi's behaviours are not influenced by the formality of the sessions. He seemed to be behaving in the similar manner whether the session was academic or least academic.

7.2.1.4 Structured observations for Abdul

Only ten of the targeted behaviours occurred during the structured observations. Most of the behaviours seemed to occur more during the academic lessons with the exception for fidgets and butted in (as the frequency count was higher) as presented in table 7.20.

Table 7.20: The subtotal of the frequency for the observed behaviour during the academic and least academic sessions for Abdul

Behaviour	Six Academic sessions	Six Least Academic sessions	Total of the frequency
Day dreams	**17**	**3**	20
Look around	**25**	**18**	43
Out of seat	**28**	**4**	32
Intrude others	1	4	5
Involved in argument	2	3	5
Fidgeting	**22**	**27**	49
Excess activity	6	3	9
Excited	4	2	6
Butting in	0	4	4
Play with objects	2	NA	2
Grabbing materials	0	0	0
Play alone	NA	0	0
Vocalizing/calling out	0	0	0
TOTAL	**107**	**68**	175

The Chi-square value indicates that the overall behaviour (total ($\chi 2$ (1)= 8.691 $p<0.01$), day dreaming ($\chi 2$ (1)= 9.80; $p<0.01$) as well as the out of seat behaviours (χ 2 (1)= 18.00; $p<0.001$) were statistically significantly different between academic and least academic sessions.

Therefore, it seems that Abdul's day dreaming, out of seat and total behaviours score are affected by the formality of the sessions.

7.2.1.5 Structured observations for Hafzi

The structured observations were carried out on three different days. Among the targeted behaviours only six occurred during the observations and the frequency varied among the behaviours as shown in table 7.21.

Table 7.21: The subtotal of the frequency for the observed behaviour during the academic and least academic sessions for Hafzi

Behaviour	Six Academic sessions	Six Least Academic sessions	Total of the frequency
Day dreams	**27**	**10**	37
Look around	**36**	**35**	71
Out of seat	**29**	**27**	56
Intrude others	0	0	0
Involved in argument	0	0	0
Fidgeting	**41**	**40**	81
Excess activity	1	0	1
Excited	0	0	0
Butting in	0	1	1
Play with objects	4	NA	4
Grabbing materials	0	0	0
Play alone	NA	0	0
Vocalizing/calling out	0	0	0
TOTAL	**138**	**113**	251

The Chi-square value indicates that there is a statistically significant difference between the behaviour of day dreaming ($\chi 2$ (1)= 7.810; $p<0.05$) observed in academic and least academic sessions but not in other behaviours. (Looking around ($\chi 2$ (1)= 0.014, $p>0.05$; Out of seat ($\chi 2$ (1)= 0,071, $p>0.05$; Fidgeting ($\chi 2$ (1)= 0.012, $p>0.05$; Total ($\chi 2$ (1)= 2.50; $p>0.05$)

Therefore it seems that Hafzi's day dreaming behaviour is affected by the formality of the sessions. But, for the other behaviours, he seemed to be behaving in the similar way whether these were academic or least academic sessions.

7.2.1.6 Structured observations for Malik

The frequency of the targeted behaviours during the structured observations varied. Out of 13 targeted behaviours, four (involved in argument, excess activity, excited and vocalizing) were not exhibited by Malik during academic lessons whereas three

(involved in argument, excited, and grabbing material) were not seen engaged during least academic lessons as in Table 7.22.

Table 7.22: The subtotal of the frequency for the observed behaviour during the academic and least academic sessions for Malik

Behaviour	Six Academic sessions	Six Least Academic sessions	Total of the frequency
Day dreams	**41**	**12**	63
Look around	**32**	**22**	54
Out of seat	**33**	**40**	73
Intrude others	**5**	**5**	10
Involved in argument	0	0	0
Fidgeting	**18**	**9**	27
Excess activity	0	2	2
Excited	0	0	0
Butting in	2	2	4
Play with objects	7	NA	7
Grabbing materials	2	0	2
Play alone	NA	9	9
Vocalizing/calling out	0	7	7
Total	**140**	**108**	258

The Chi-square value indicates that for the total ($\chi 2$ (1)= 4.129; $p<0.05$) and day dreaming ($\chi 2$ (1)= 5.730; $p<0.05$) behaviours there is a statistically significant difference between the behaviour observed in academic and least academic sessions but not in other behaviours (looking around ($\chi 2$ (1)= 1.852, $p>0.05$; out of seat ($\chi 2$ (1)= 0.671, $p>0.05$; fidgeting ($\chi 2$ (1)= 3.00; $p>0.05$).

Hence, it seems that some of Malik's behaviours are affected by the formality of the lessons though in most behaviours he seemed to be behaving in the similar manner in academic or least academic sessions.

7.2.1.7 Structured observations for Kefli

The observations were carried out on three different days. The subtotal of the frequency count of the presence of each targeted behaviour for academic and least academic sessions are summarised in Table 7.23.

Table 7.23: The subtotal of the frequency for the observed behaviour during the academic and least academic sessions for Kefli

Behaviour	Six Academic sessions	Six Least Academic sessions	Total of the frequency
Day dreams	0	1	1
Look around	**3**	**12**	15
Out of seat	**83**	**39**	122
Intrude others	**5**	**18**	23
Involved in argument	3	4	7
Fidgeting	**16**	**20**	36
Excess activity	**6**	**6**	12
Excited	**12**	**0**	12
Butting in	4	10	14
Play with objects	1	NA	1
Grabbing materials	3	5	8
Play alone	NA	24	24
Vocalizing/calling out	**30**	**10**	40
TOTAL	**166**	**149**	315

The Chi-square value indicates that there is no statistically significant difference in overall the total score ($\chi 2$ (1)= 0.917; $p>0.05$) or fidgeting ($\chi 2$ (1)= 0.444, $p>0.05$) between the behaviours observed in academic and least academic lessons. However statistically significant differences were found in a number of behaviours: looking around ($\chi 2$ (1)= 5.400 $p<0.01$), out of seat ($\chi 2$ (1)= 15.86 $p<0.01$), Interfering with others ($\chi 2$ (1)= 7.348 $p<0.01$), excited ($\chi 2$ (1)= 12.00 $p<0.001$) and vocalizing/calling out ($\chi 2$ (1)= 10.00; $P<0.01$).

Therefore, it seemed that the formality of the lessons has an impact on the way Kefli behaved. He seemed to engage more in vocalising, out of seat, and being excited

during academic sessions but less in looking around, interfering with others during the same sessions.

7.2.1.8 Structured observations for Bidin

The structured observations were done on three different days and the frequency of the targeted behaviour was counted and the subtotal of the frequency for academic and least academic are as in table 7.24 below. Out of 13 targeted behaviours, only five took place during these observations. Most of the behaviours occurred more frequently in academic lessons.

Table 7.24: The subtotal of the frequency for the observed behaviour during the academic and least academic sessions for Bidin

Behaviour	Six Academic sessions	Six Least Academic sessions	Total of the frequency
Day dreams	**12**	**7**	19
Look around	**29**	**16**	45
Out of seat	**37**	**8**	45
Intrude others	1	8	9
Involved in argument	0	0	0
Fidgeting	**19**	**18**	37
Excess activity	0	0	0
Excited	0	0	0
Butting in	0	0	0
Play with objects	6	NA	6
Grabbing materials	0	1	1
Play alone	NA	18	18
Vocalizing/calling out	0	0	0
TOTAL	**104**	**76**	180

Chi-square values indicates that there are statistically significant differences between the looking around and out of seat behaviours observed in academic and least academic lessons: looking around ($\chi 2$ (1)=3.755; <0.05); out of seat ($\chi 2$ (1)=18.68; $p<0.001$).

However there are no differences found in overall (total) behaviour, day dreaming and fidgeting observed in academic and least academic lessons: total ($\chi 2$ (1)=2.781, p>0.05); day dreamed ($\chi 2$ (1)=1.315 , p>0.05); fidgeting ($\chi 2$ (1)=0.027; p>0.05).

Therefore, it seemed that the formality of the lessons has an impact on Bidin's looking around and out of seat where he engaged with the behaviours more frequently during the academic sessions.

7.2.1.9 Structured observations for Narmi

The structured observations were carried out for twelve sessions on two days. Most of the behaviours seemed to be more frequent in least academic lessons.

Table 7.25: The subtotal of the frequency for the observed behaviours during the academic and least academic sessions for Narmi

Behaviour	Six Academic sessions	Six Least Academic sessions	Total of the frequency
Day dreams	**14**	**20**	34
Look around	**27**	**39**	66
Out of seat	**67**	**88**	155
Intrude others	**15**	**13**	28
Involved in argument	0	0	0
Fidgeting	**19**	**22**	41
Excess activity	1	7	8
Excited	0	2	2
Butting in	0	1	1
Play with objects	17	NA	17
Grabbing materials	0	0	0
Play alone	NA	17	17
Vocalizing/calling out	**5**	**8**	13
TOTAL	**165**	**217**	382

The Chi-square value indicates that there is a statistically significant difference in overall behaviour (total ($\chi 2$ (1)=7.079; p<0.05) between academic and least academic sessions. However, there is no statistically significant difference in any individual behaviour observed in academic and least academic lessons: day dreaming

($\chi 2$ (1)= 1.058, p>0.050; looking around ($\chi 2$ (1)=2.182, p>0.05); out of seat ($\chi 2$ (1)= 2.845, p>0.05); interfering with others ($\chi 2$ (1)= 0.143, p>0.05); and fidgeting ($\chi 2$ (1)= 0.219, p>0.05). The frequency of the targeted behaviour was coded during the observations and the subtotal of the frequency of the occurred behaviours for academic and least academic lessons are as table 7.25.

On the whole, taking into account all the 13 behaviours together, it appears that the least formal sessions had an impact in the way Narmi behaved.

7.2.1.10 Structured observations for Rozi

The structured observations were carried out for 12 sessions on three days. Thirteen behaviours were observed and coded during the observations. The chi-square value indicates that there are statistically significant differences between the behaviour of looking around and out of seat observed in academic and least academic sessions: looking around ($\chi 2$ (1)= 12.00, p<0.001); out of seat ($\chi 2$ (1)= 4.263; p<0.05) but not in other behaviours: day dreaming ($\chi 2$ (1)= 0.308, p>0.05); interfering with others ($\chi 2$ (1)= 2.579, p>0.05); total ($\chi 2$ (1)= 0.048; P>0.05).

The frequency of the behaviour occurred was subgrouped according to academic and least academic lessons and the subtotal of the frequencies are as in table 7.26 below.

Table 7.26: The subtotal of the frequency for the observed behaviour during the academic and least academic sessions for Rozi

Behaviour	Six Academic sessions	Six Least Academic sessions	Total of the frequency
Day dreams	**28**	**24**	52
Look around	**12**	**36**	48
Out of seat	**14**	**5**	19
Intrude others	1	9	10
Involved in argument	**13**	**6**	19
Fidgeting	0	0	0
Excess activity	0	1	1
Excited	0	0	0
Butting in	1	0	1
Play with objects	16	NA	16
Grabbing materials	2	4	6
Play alone	NA	3	3
Vocalizing/calling out	**4**	**6**	10
TOTAL	**91**	**94**	185

Therefore it seems that Rozi's looking around and out of seat behaviours are affected by the formality of the sessions. She engaged more in looking around but less out of seat during least academic sessions. For other behaviours, Rozi seemed to be behaving in the similar way whether it is academic or least academic sessions.

The results from the above structured observation on ten cases of children with ADHD show that some ADHD-like behaviour in some pupils was affected by the type of session (whether academic or least academic) whereas other behaviours were not. Nevertheless, these pupils show a good deal of variability and no two children have a similar pattern of targeted behaviours. The variation of the behaviours suggests these groups of pupils: those affected by academic sessions; those affected by least academic session; and those not affected by the type of the sessions.

a) Behaviours and the pupils with ADHD that were affected more by academic session:

   i) Overall behaviour: Mahdi; Abdul; and Malik.

   ii) Out of seat: Mahdi; abdul; Kefli; Bidin and Rozi.

iii) Daydreaming: Abdul; Hafzi; and Malik

iv) Looking around: Mahdi; Bidin; and Rozi.

v) Vocalizing/calling out: Kefli

vi) Being exited: Kefli

b) Behaviours and the pupil that were affected by least academic session

i) Overall behaviour: Rizam

ii) Vocalizing/calling out: Rozi.

c) The pupil that was not clearly affected by the type of the session: Justi.

7.2.2 Observation of the pupils with ADHD and their comparisons peers

As mentioned earlier in this chapter, each pair of ten pupils with ADHD and their comparison peers was observed for twelve sessions during structured observations. The targeted behaviours were coded as mentioned in chapter five. This procedure was meant to identify the differences between the pupils with ADHD and their comparison in each targeted behaviour, and chi-square analysis was used to examine for statistically significant differences. This subsection highlights the targeted behaviours, which were found to be statistically significantly different concerning each pair of the pupils.

In general, the frequency of the targeted behaviours was higher among the pupils with ADHD compared to their comparisons. However, in terms of individual behaviours, the examination of 13 targeted behaviours shows that only seven were statistically significantly different between the pupils with ADHD and their comparison peers. These behaviours are day dreaming, looking around, out of seat, fidgeting, vocalising/calling out, interfering with others and playing with objects (during academic lessons)/playing alone (during free play sessions).

7.2.2.1 Overall targeted behaviours

The pupils with ADHD engaged in targeted behaviours (in general) more frequently than their comparisons in that the range of the frequency count in the overall behaviour for 12 sessions observed was between 175 and 395 times whereas the range for their comparison peers was between 18 and 24 times as shown in Table 7.27.

Table 7.27: The frequency of the observed overall (total) behaviour during the structured observation for pupils with ADHD and their comparison peers

Behaviour: Total	Total : 12 sessions	$\chi 2$ (1)=	Academic: 6 sessions	$\chi 2$ (1)=	Least academic 6 sessions	$\chi 2$ (1)=
Rizam : Maza	261 : 24	197.7	129 : 12	97.08	132 : 12	100.00
Mahdi : Osman	393 : 34	301.8	142 : 24	83.87	151 : 10	123.5
Justi : Aziz	213 : 25	148.5	106 : 15	68.43	107 : 10	80.41
Abdul : Afli	175 : 19	125.4	107 : 13	73.63	68 : 6	51.94
Hafzi : Ali	251 : 18	201.8	138 : 8	115.7	113 : 10	86.25
Malik : Fauzi	248 : 18	198.8	140 : 4	128.4	108 : 14	72.42
Kefli : Atan	315 : 18	264.8	166 : 8	143.5	149 : 10	121.5
Bidin : Fizal	180 : 23	121.4	104 : 18	60.62	76 : 5	62.23
Narmi : Amin	382 : 25	313.1	165 : 8	142.5	217 : 17	170.9
Rozi : Dilah	185 : 21	130.5	91 : 11	62.75	94 : 10	67.84

P<0.001 in all cases

The chi-square values indicate that for all cases, the pupils with ADHD are significantly different from their peers at $p < 0.001$ where the pupils with ADHD exhibited the targeted behaviours more often then their comparisons. The same situation is found when the overall behaviours are compared between the pupils with ADHD and their comparisons within the academic as well as least academic sessions. The differences are at $p < 0.001$ for all cases (see Table 7.27).

7.2.2.2 Day dreaming

The frequency tabulations for daydreaming behaviour were statistically significantly different between the academic and least academic sessions as well as total sessions. As shown in table 7.28 below, the day dreaming behaviour was observed between one to 73 times (during twelve sessions' observations) among the ten pupils with ADHD. In contrast, their comparisons engaged in daydreaming between 0 to six times in the same periods of observations.

Table 7.28: Comparison of day dreaming behaviour for pupils with ADHD and their comparison peers (total, academic and least academic sessions)

Day dream Behaviour	Total 12 session	$\chi 2$ (1)=	Academic; 6 sessions	$\chi 2$ (1)=	Least academic; 6 sessions	$\chi 2$ (1)=
Rizam : Maza	52 : 1	49.08 ***	23 : 1	20.16 ***	29 : 0	29.00 ***
Mahdi : Osman	73 : 0	73.00 ***	39 : 0	39.00 ***	34 : 0	34.00 ***
Justi : Aziz	49 : 0	49.00 ***	19 : 0	19.00 ***	30 : 0	30.00 ***
Abdul : Afli	20 : 1	17.19 ***	17 : 1	14.22 ***	3 : 0	-
Hafzi : Ali	37 : 0	37.00 ***	27 : 0	27.00 ***	10 : 0	10.00 ***
Malik : Fauzi	53 : 0	53.00 ***	41 : 0	41.00 ***	12 : 0	12.00 ***
Kefli : Atan	1 : 2	-	0 : 0		1 : 2	-
Bidin : Fizal	19 : 0	19.00 ***	12 : 0	12.00 ***	7 : 0	-
Narmi : Amin	34 : 6	19.6 ***	14 : 0	14.00 ***	20 : 6	7.538 **
Rozi : Dilah	52 : 0	52.00 ***	28 : 0	28.00 ***	24 : 0	24.00 **

* P<0.05 ; ** P<0.01 ; ***P<0.001

The chi-square values indicate that nine of ten pupils with ADHD were statistically significantly different in daydreaming behaviour compared to their comparisons. Specifically, the situation observed could be categorised in three groups;

i) No difference between one pupil with ADHD and his comparison in either academic or least academic lessons (Kefli and Atan)

ii) There were statistically significant differences between six pupils with ADHD and their comparisons $p<0.001$ or $p<0.01$ (Rizam : Maza,; Mahdi : Osman; Justi :Aziz; Hafzi : Ali; Narmi : Amin; Rozi : Dilah) in both academic and least academic sessions.

iii) The difference was statistically significant in academic sessions but not in least academic sessions in two of ten cases (Abdul : Afli and Bidin : Fizal).

7.2.2.3 Looking around

The frequency counts for looking around behaviour in each case were as shown in table 7.29 below. Within twelve sessions of structured observation, pupils with ADHD engaged in looking around between 15 to 147 times. In contrast, their comparisons employed looking around between six to 30 times in the same periods of observations.

The chi-square values indicate that all the ten pupils with ADHD were statistically significantly different in looking around behaviour compared to their comparisons: nine of them were significant at $p< 0.001$ whereas the other one (Kefli) was significantly different at $p < 0.05$. In terms of session classification, the nine were significantly different for both academic and least academic sessions at $p < 0.001$. In Kefli's case, it was not possible to analyse by chi-square owing to low expected frequency value, but the absolute scores are the same (3 : 3).

Table 7.29: Comparison of looking around behaviour for pupils with ADHD and their comparison peers (total, academic and least academic sessions)

Behaviour: Looked around	Total 12 sessions	$\chi 2$ (1)=	Academic, 6 sessions	$\chi 2$ (1)=	Least academic; 6 sessions	$\chi 2$ (1)=
Rizam: Maza	76 : 7	57.36 ***	37 : 3	16.90 ***	39 : 4	28.48 ***
Mahdi: Osman	147 : 30	77.33 ***	95 : 20	48.91 ***	52 : 10	28.45 ***
Justi: Aziz	71 : 13	40.05 ***	37 : 8	18.68 ***	34 : 5	21.56 ***
Abdul :Afli	43 : 12	17.47 ***	25 : 7	10.12 **	18 : 5	7.347 **
Hafzi : Ali	71 : 13	40.05 ***	36 : 6	21.42 ***	35 : 7	18.66 ***
Malik: Fauzi	54 : 10	30.25 ***	32 : 4	21.77 ***	22 : 6	9.142 **
Kefli: Atan	15 : 6	3.857 *	3 : 3	-	12 : 3	5.400 *
Bidin: Fizal	45 : 6	29.82 ***	29 : 5	16.94 ***	16 : 1	13.23 ***
Narmi : Amin	66 : 10	41.26 ***	27 : 4	17.06 ***	39 : 6	24.20 ***
Rozi : Dilah	48 : 12	21.60 ***	12 : 4	4.000 *	36 : 8	17.81 ***

* P<0.05 ; ** P<0.01 ; ***P<0.001

7.2.2.4 Out of seat

The pupils with ADHD engaged more often in out of seat behaviour than their comparisons. The frequency varies between 19 (Rozi) and 155 (Narmi) whereas the comparison peers were between 3 to 15 times within the same period of observations. The Chi-square values indicate that in nine of ten cases the pupils with ADHD were statistically significantly different from their peers at $p < 0.001$ in out of seat behaviour for total behaviour. A similar pattern was found for both academic and least academic sessions separately, with seven significant different, one non-significant and two unable to compute. Rozi's behaviour was not different from her comparison on any scores (two non-significant and one not computable).

Table 7.30: Comparison of out of seat behaviour for pupils with ADHD and their comparison peers (total, academic and least academic sessions)

Behaviour: Out of seat	Total 12 sessions sessions	$\chi 2$ (1)=	Academic; 6 sessions	$\chi 2$ (1)=	Least academic; 6 sessions	$\chi 2$ (1)=
Rızam: Maza	65 : 15	31.25 ***	32 : 8	14.40 ***	24 : 7	9.322 **
Mahdi: Osman	81 : 3	72.42 ***	53 : 3	44.64 ***	28 : 0	28.00 ***
Justı: Azız	67 : 12	38.29 ***	33 : 7	16.90 ***	34 : 5	21.56 ***
Abdul: Afli	32 : 6	17.78 ***	28 : 5	16.03 ***	4 : 1	_
Hafzı: Alı	56 : 4	45.06 ***	29 : 2	23.52 ***	27 : 2	21.55 ***
Malik: Fauzi	73 : 8	52.16 ***	33 : 0	33.00 ***	40 : 8	21.33 ***
Kefli: Atan	122 : 7	102.5 ***	83 : 4	71.73 ***	39 : 3	30.85 ***
Bidin: Fizal	45 : 13	17.65 ***	37 : 11	14.08 ***	8 : 2	3.600 P>0.05
Narmi: Amin	155 : 8	132.5 ***	67 : 4	55.90 ***	88 : 4	76.69 ***
Rozi : Dilah	19 : 9	3.571 P > 0.05	14 : 7	2.333 P>0.10	5 : 2	_

* P<0.05 ; ** P<0.01 ; ***P<0.001

7.2.2.5 Fidgeting

Fidgeting behaviour was observed in nine of ten pupils with ADHD. Rozi was the exception who was not seen to fidget during the structured observations. The frequency of the fidgeting behaviour was varied among the nine cases with Hafzi scored the highest; 81 times fidgeting behaviour during 12 sessions of observation. On the other hand, out of ten comparisons, only one (Fizal) fidgeted during the same period of observations.

The chi-square values indicate that there are differences in total fidgeting behaviour observed between the pupils with ADHD and their comparison. In eight cases, the differences were statistically significant at $p<0.001$ whereas one case (Rizam) was not suitable for chi-square analysis as the expected frequency was less than 5 (see table 7.31

below). A similar pattern was found for academic and least academic sessions. Eight were statistically significantly different at $p<0.001$, one not computable (Rizam) for academic sessions whereas six were statistically significantly different at $p<0.001$ and three (Rizam, Justi and Malik) were not computable for least academic sessions.

Table 7.31: Comparison of fidgeting behaviour for pupils with ADHD and their comparison peers (total, academic and least academic sessions)

Behaviour: Fidgeting	Total 12 sessions	$\chi 2$ (1)=	Academic; 6 sessions	$\chi 2$ (1)=	Least academic; 6 sessions	$\chi 2$ (1)=
Rizam: Maza	5 : 0	_	3 : 0	_	2 : 0	_
Mahdi: Osman	32 : 0	32.00 ***	15 : 0	15.00 ***	17 : 0	17.00 ***
Justi: Aziz	18 : 0	18.00 ***	12 : 0	12.00 ***	6 : 0	_
Abdul: Afli	49 : 0	49.00 ***	22 : 0	22.00 ***	27 : 0	27.00 ***
Hafzi: Ali	81 : 0	81.00 ***	41 : 0	41.00 ***	40 : 0	40.00 ***
Malik: Fauzi	27 : 0	27.00 ***	18 : 0	18.00 ***	9 : 0	_
Kefli: Atan	36 : 0	36.00 ***	16 : 0	16.00 ***	20 : 0	20.00 ***
Bidin: Fizal	37 : 2	31.41 ***	18 : 2	12.80 ***	19 : 0	19.00 ***
Narmi: Amin	41 : 0	41.00 ***	19 : 0	19.00 ***	22 : 0	22.00 ***
Rozi : Dilah	0 : 0	_	0 : 0	_	0 : 0	_

* P<0.05 ; ** P<0.01 ; ***P<0.001

7.2.2.6 Vocalising/calling out

Out of ten pupils with ADHD, only six were observed to exhibit vocalising/calling out answer behaviour during the structured observations. Out of ten comparisons, two were observed involved in calling out but in all three analyses (Kefli: Atan and Rizam: Maza), the pupil with ADHD engaged more frequently than his comparison.

Out of the six cases, four were statistically significantly different at $p < 0.001$ for.total behaviour. The other two cases were not tested as the expected frequency were less than 5 as shown in Table 7.32 below. In the case of academic and least academic sessions, only two comparisons were possible, both showing statistically significant differences at $p<0.001$.

Table 7.32: The total of the frequency of the observed vocalising/calling out behaviour during the structured observation for pupils with ADHD and their comparison peers

Behaviour: Vocalizing/ calling out	Total 12 sessions	$\chi 2$ (1)=	Academic, 6 sessions	$\chi 2$ (1)=	Least academic; 6 sessions	$\chi 2$ (1)=
Rizam : Maza	43: 0	43.00 ***	16 : 0	16.00 ***	27 : 0	27.00 ***
Mahdi: Osman	3 : 0	-	3 : 0	-	0 : 0	-
Malik : Fauzi	7 : 0	-	0 : 0	-	7 : 0	-
Kefli : Atan	40 : 2	34.34 ***	30 : 1	27.13 ***	30 : 1	27.13 ***
Narmi : Amin	13 : 0	13.00 ***	5 : 0	-	8 : 0	-
Rozi : Dilah	10 : 0	10.00 ***	4 : 0	-	6 : 0	-

*** P<0.001

7.2.2.7 Interfering with others

Nine of ten pupils with ADHD were engaged in behaviour of interfering with others during the structured observations. On the other hand, only one of the ten comparison peers was involved in interfering with others during the same period of observations. The chi-square values show that six of the nine are statistically significantly different from their comparisons when this behaviour is concerned at $p <0.001$ or $p<0.01$ (see table 7.19 below). In terms of sessions, the behaviour observed during academic sessions were statistically significantly different in two cases (Mahdi: Osman and Narmi: Amin) whereas statistically significant differences were found in three cases

observed during least academic lessons (Mahdi:Osman; Kefli: Atan; and Narmi : Amin) as in table 7.33 below.

Table 7.33: The total of the frequency of the observed interfering with others behaviour during the structured observation for pupils with ADHD and their comparison peers

Behaviour: Intrude others	Total 12 sessions	$\chi 2$ (1)=	Academic, 6 sessions	$\chi 2$ (1) =	Least academic; 6 sessions	$\chi 2$ (1)=
Rizam: Maza	11 : 0	11.00 ***	7 : 0	-	4 : 0	-
Mahdi: Osman	22 : 0	22.00 ***	10 : 0	10.00 **	12 : 0	12.00 ***
Justi : Aziz	3 : 0	-	1 : 0	-	2 : 0	-
Abdul: Afli	5 : 0	-	1 : 0	-	4 : 0	-
Hafzi: Ali	0 : 0	-	0 : 0	-	0 : 0	-
Malik: Fauzi	10 : 0	10.00 **	5 : 0	-	5 : 0	-
Kefli: Atan	23 : 0	23.00 ***	5 : 0	-	18 : 0	18.00 ***
Bidin: Fizal	9 : 3	3.000	1 : 2	-	8 : 1	-
Narmi: Amin	28 : 0	28.00 ***	15 : 0	15.00 ***	13 : 0	13.00 ***
Rozi : Dilah	10 : 0	10.00 **	1 : 0	-	9 : 0	-

* P<0.05 ; ** P<0.01 ; ***P<0.001

7.2.2.8 Playing with object or playing alone

Playing with object was observed in all the ten pupils with ADHD but not in their comparisons during the academic sessions. The frequency of the occurrence in each case varied from 1 to 17 times as shown in table 7.34. On the other hand, seven of ten pupils with ADHD but only one of their comparisons were engaged in playing alone during the free-play sessions.

The chi-square values indicate that three cases were statistically significantly different between the pupils with ADHD and their comparisons in playing with objects as well as

playing alone but only one pupil with ADHD (Narmi) was statistically significantly different in engaging in both behaviours (see table 7.34). The other cases were not computed by chi-square analysis since the expected frequencies were less than five.

Table 7.34: Comparison of playing with objects(during academic lessons) or playing alone (during free play) behaviour for pupils with ADHD and their comparison peers

Behaviour:	Academic; 6 sessions (Playing with objects)	$\chi 2$ (1)=	Least academic; 6 sessions (playing alone)	$\chi 2$ (1)=
Rizam : Maza	3 : 0	-	1 : 1	-
Mahdi : Osman	15 : 0	15.00 ***	2 : 0	-
Justi : Aziz	3 : 0	-	0 : 0	-
Abdul : Afli	2 : 0	-	0 : 0	-
Hafzi : Ali	4 : 0	-	0 : 0	-
Malik : Fauzi	7 : 0	-	9 : 0	-
Kefli : Atan	1 : 0	-	27 : 0	27.00 ***
Bidin : Fizal	6 : 0	-	18 : 0	18.00 ***
Narmi: Amin	17 : 0	17.00 ***	17 : 0	17.00 ***
Rozi : Dilah	16 : 0	16.00 ***	3 : 0	-

* P<0.05 , ** P<0.01 , ***P<0.001

Note: Play with objects was observed only during the academic sessions and play alone was observed only for least academic sessions (free play).

This subsection compared the observed behaviours of pupils with ADHD and their normative comparison peers with respect to type of sessions: academic and least academic. The pupils with ADHD had statistically different score indicating more problems overall and in each type of session.

However, in terms of individual behaviours, out of the 13 behaviours observed, 7 were significantly different between the two groups of pupils. All together the results for individual behaviours may be simplified as follows (analyses in overall, academic session and least academic session):

Table 7.35 The individual behaviour according to total score, score for academic session and score for least academic session where pupils with ADHD were significantly different from comparison peers

Behaviour	Total score for both sessions	Academic session	Least academic session
Looking around	All pairs	All pairs except **Kefli** : Atan	All pairs
Out of seat	All pairs except **Rozi** : Dilah	All pairs except **Rozi** : Dilah	All pairs except **Abdul**, Afli **Rozi** : Dilah
Daydreaming	All pairs except : **Kefli** and Atan	All pairs except **Kefli** : Atan	All pairs except **Kefli**: Atan **Bidin**: Fizal **Abdul:** Afli
Fidgeting	All pairs except **Rizam** : Maza **Rozi** : Dilah	All pairs except **Rizam** : Maza **Rozi** : Dilah	All pairs except **Rizam** : Maza **Justi:** Aziz **Malik**: Fauzi **Rozi** : Dilah
Interfering with others	All pairs except **Justi**: Aziz **Abdul**, Afli **Hafzi**: Ali	Only **Mahdi** :Osman **Narmi**: Amin	Only **Mahdi**, Osman **Kefli**: Atan **Narmi**: Amin
Vocalizing or calling out	Only **Rizam** : Maza **Kefli** : Atan **Narmi**: Amin **Rozi** : Dilah	Only **Rizam** : Maza **Kefli** : Atan	Only **Rizam** : Maza **Kefli** : Atan
Playing with objects or palying alone	-NA-	Only **Mahdi** :Osman **Narmi**: Amin **Rozi**: Dilah	Only **Kefli** : Atan **Bidin**: Fizal **Narmi**: Amin

Note: Name in bold are the pupil with ADHD who are significantly displayed more frequent of particular behaviour than comparison peer

7.5 CONCLUSION

Statistical analysis has shown that the ADHDC used in the present study is dependable for screening pupils with ADHD as its reliability measures are within the acceptable range. The findings from ADHDC rating scores also showed that Malaysian preschool children in the sample are not much different from their counterparts in other places as reviewed in terms of the uniqueness of cases as well as the ratio when gender is concerned. However the ratio between the subtypes in the sample are the opposite from the expected as the combined type group was much smaller than the other two groups whereas from the literature, children in this age group were more likely to fall in the hyperactivity/impulsivity group.

The findings of observed targeted behaviours showed that pupils with ADHD may be affected by the type of lesson or session. For some pupils in this sample, it is obvious that some particular individual behaviours are not affected by the formality of the lesson but rather they behave more or less in a similar manner whether it is academic or least academic.

Statistical analyses of the frequency of the targeted behaviours showed that, as expected, pupils with ADHD are more likely to engage with the behaviours compared to their comparison peers. This situation is found in both academic and least academic sessions.

Some of these findings are probed more deeply by qualitative methods, in order to understand the complex nature of ADHD in relation to contextual factors of mainstream classrooms. The next chapter presents the analysis of the qualitative data.

Chapter 8

ANALYSIS OF QUALITATIVE DATA

The qualitative data collected from ten cases studied in eight schools are analysed and presented in this chapter. The evidence from the observations and interviews is discussed with regard to explore the nature of pupils with ADHD and the way those pupils behave in learning situations and their social interactions with peers and the adults in the class.

The set of information collected, which was clustered as mentioned in chapter five is divided into three sections: section one regarding the pupils with attention deficit hyperactivity disorder (ADHD) based on semi-structured interview with pupils to examine the reputation of the particular pupils with ADHD in their class. Section two describes each pupil with ADHD in detail based on interviews with respective teachers Mode-one part-one, interviews with other informants and unstructured observations while section three presents the teachers' knowledge, and perceptions on special educational needs (SEN) in general, ADHD and the implementation of inclusive education (IE) in Malaysia.

As the data collection followed the same pattern with the same format of coding and jotting notes, the findings related to pupils with ADHD are discussed according to the cases. In order to present the findings comprehensively, the teachers' views were blended with the information from observations and the interviews with pupils. Essentially, the findings related to pupils with ADHD are presented based on:

a) Interview with teacher mode one- part one: Teachers' knowledge and perception of particular pupil selected as "ADHD" in their class.

b) Interviews with teacher mode two: The intervention and approach in teaching the particular pupil with ADHD.

c) Interview with pupils: Pupils' perceptions, feeling and needs regarding the common process of classroom events (during teaching and learning).

d) Unstructured observations: the information is used to confirm the social standing of these pupils (with ADHD) and to countercheck the information collected by the interview).

e) Unintentional information collected occasionally by chance from others involved with the particular pupils with ADHD such as assistant teachers or parents as mentioned in Table 6.8.

The environments within the eight government schools where the 10 case studies were carried out were discussed in chapter 6. Whenever appropriate, the situations related to the particular schools mentioned in chapter 6 are referred to in the narrative descriptions in this chapter as it is designed to support the cases based on the information from the interviews and observations. The analysed data in certain cases are sketched or portrayed in alternative ways such as vignettes.

8.1 PUPILS WITH ADHD: SEMI-STRUCTURED INTERVIEWS WITH PUPILS WITH ADHD, COMPARISONS AND NON -ADHD

Information was collected in the mode one interview with pupils to examine the popularity of the particular pupils with ADHD. The mode one interview was a semi-structured interview and the schedules are presented in appendix 6. Every pupil with ADHD chosen for case study was asked two basic questions. Question one concerned choosing three peers in the class for sharing the sweets they have (given by the researcher). Question two was about the peers they preferred to play with when they were provided with a set of toys or game.

Seven pupils with ADHD chose peer/peers in the class while the other three chose sisters or friends at home to share their sweets. The peers mentioned by the pupils with ADHD then were asked the same question. Two of them chose to share the sweets with the respective pupil with ADHD while the remainder chose other peers. Hafzi, Malik

and Bidin were chosen in return (reciprocal nomination) by one of the peers they chose to share the sweets. Based on the responses, the data were simplified as in table 8.1.

Table 8.1: Cross check responses among pupils with ADHD and their peers in semi structured interviews

Pupil with ADHD	The person for sharing sweets	The pupil to play with	Note
P1 **(Rizam)**	Sisters (at home)	Ca (Shafek), Cb (Afiq) and Cc (Maza)	None of Ca, Cb, or Cc chose P1 for sharing sweets or play
P2 **(Mahdi)**	Cd (Hamirul)	Cd (Hamirul)	Cd not nominated P2 for sharing sweets or play
P3 **(Justi)**	Sisters at home	Ce (Azwan)	Ce chose other peers to play with or to share sweets
P4 **(Abdul)**	Cf (Aslam)	Cf (Aslam)	Cf chose to share sweets and play with other peers
P5 **(Hafzi)**	Cg (Iman) and Ch (Hasif)	Cf (Aslam)	Only Cg chose to share sweets with P5 while Ch and Cf chose other than P5
P6 **(Malik)**	Sisters	Ci (Fauzi), Cj (Amri), Ck (Faiz), and Cl (Zahir)	Ci, Ck chose other than P6 for both situations, Cj nominated P6 for sharing sweets and Cl chose P6 for play
P7 **(Kefli)**	Cm (Bazli) and Cn (Fahim)	Cn (Fahim) and Cq (Boyi)	Only Cq chose to play with P7 (Note: Cq is an assistant teacher's son, a 4 years old boy)
P8 **(Bidin)**	Cr (Rafi) and CS (Shamsuri)	Cr (Rafi) and Ct (Naim)	Ct chose to share sweets with P8
P9 **(Narmi)**	Cv, Cw, Cx and assistant teacher	No explicit response	None of Cv, Cw or Cx chose P9 for sharing sweet or play
P10 **(Rozi)**	Share with friends at home	Cy (fifa)	Cy chose other than P10 for sharing sweet or play

Note:
1) In cases of P4 and P5 as well as P9 and P10, they were in the same class.
2) The names in bold are pupils with ADHD
3) Ca- Cy were peers in the class respectively, mentioned by P1-P10 as friends they chose

In choosing the peers for play with as a reply in question two, the pupils with ADHD were varied in their responses. One pupil totally ignored the questions as he gave no explicit response. The other nine chose between one to four peers to play with. In the interview with the nominated peers, two of them chose to play with the respective pupils with ADHD namely Malik and Kefli (reciprocal nomination).

In addition, two other pupils were picked at random in every class to get their views on the pupil/pupils with ADHD in their class in terms of popularity/friendship. The same questions were used and their responses to both questions were as expected, where none of them chose pupil/pupils with ADHD in their class to share sweets or to play with.

In general pupils with ADHD were not popular amongst their peers as most of them were not chosen by peers to share sweets or to play with. Among the ten pupils with ADHD, Malik was the most popular as he was chosen by two of his peers; one to share sweet and the other peer chose to play with him. Kefli and Bidin were chosen by one of their peers.

8.2 THE PUPILS WITH ADHD IN OVERALL PICTURE

As the case for structured observation, the same ten pupils with ADHD as well as ten comparison pupils were selected for unstructured observations and informal interviews. Additionally, the teachers relevant to those pupils were interviewed. Table 8.1 shows the association between the pupils and the teachers in which pseudonyms are used to replace the real names.

The teachers were interviewed concerning the pupil with ADHD and a comparison peer in their class. They were requested to respond to the questions in the interview mode one (part one) based on their observation and experiences in teaching the particular pupils. As shown in table 8.2, the teachers have had comprehensive interactions with the pupils for at least eight months before the interview.

Table 8.2: The teachers and the pupils involved in the discussion in interviews mode 1 part 1

Teachers' Name & school	Pupil's (with ADHD) name	Comparison's name	Length of time in knowing the pupils
Miss Hana (SU1)	Rizam (boy)	Maza (boy)	8 months
Ms Irah (SU2)	Mahdi (boy)	Osman (boy)	9 months
Ms Mizam(SU3)	Justi (boy)	Aziz (boy)	9 months
Ms Sali (SU4)	Abdul (boy)	Afli (boy)	8 months
Ms Sali (SU4)	Hafzi (boy)	Ali (boy)	9 months
Ms Zuyah (SR1)	Malik (boy)	Fauzi (boy)	9 months
Ms Kasma (SR2)	Kefli (boy)	Atan (boy)	9 months
Ms Tasya (SR3)	Bidin (boy)	Fizal (boy)	9 months
Ms Alin (SR4)	Narmi boy)	Amin (boy)	9 months
Ms Alin (SR4)	Rozi (girl)	Dilah (girl)	9 months

There are ten cases discussed in this section. To describe the facts disclosed by the teachers, the information from the pupils and unstructured observations, this section highlights the situation case by case. The subheadings in this section carry the pseudonyms of preschool pupil with ADHD and the respective teacher; for instance Rizam in 8.2.1 was a first pupil with ADHD being studied whereas Miss Hana was his class teacher.

8.2.1 Rizam - Miss Hana

8.2.1.1 Rizam from unstructured observations and interviews

Rizam is the only boy and the second in the family of three. His father is a government official and his mother, a fulltime housewife. They live in government quarters one kilometre away from school. In terms of health, he has no records of any illnesses. His attendance was pretty regular and he arrived in school on time. His ambition is to be like his father wearing a neat uniform yet he did not really know his father's job. He comes to school with some pocket money, and home cooked food as well as a bottle

drink whereas other preschool pupils in the class were not doing so as the meals were provided.

a) Unstructured observations

The class situations were observed for eight days, as he was the first case to be studied. One day was used to refine proficiency and adjustment to the coding procedure and the use of time sampling tape. The other seven days were used to collect information for structured and unstructured observations. Four days of the observations were during the lessons where the preschool teacher was not around and other adults managed the class whereas the other three days were during the presence of the preschool teacher. There were more observations of Rizam compared to the other nine cases for the reasons as mentioned in chapter 6.

After one full day of the researcher sitting in the class, the pupils acted naturally as they were used to my presence. Within unstructured observations, some characteristics became apparently distinguished.

In line with his teacher's comments, Rizam was choosy as he cannot get along with the Indian boy Nishan at all over this time (since January) and for no reasons known to the teacher or which could be determined from the observations, he appeared to dislike very much one of the girls in the class as well. The pupil who seemed to fascinate Rizam most was Maza, as demonstrated on some occasions during the observations. Maza seemed to be tolerated by him more than other peers could offer and he generously shared his food or things only with Maza. At the recess time his sister bought him his favourite local snack. During meals time, he was the last to finish eating as he had a lot of food.

On one of the observation days, he brought his father's car key (in a bundle of keys) to school and put it on his desk. The teacher teased him with 'rich boy' as he didn't say anything when he was asked about the key.

He left the toys or books he used unkempt and when the teacher asked him, he pointed to others, on many occasions to Nishan. He repeatedly forgot his things and needed to be reminded by his mother when she fetched him at 11.30 a.m. The mother even helped in putting on his shoes.

He was seated close to the teacher most of the time in order to have her attention. Despite being placed in front of the teacher's eyes in group activity or individual work activity he was not enthusiastic to do the task as he merely likes outdoor activities. He was in his seat for very short times before he moves around and as a consequence of the over active behaviour he was off-task for almost all of the time. He hung around the class, stayed on one activity for a short period and then looked for a new activity. He hardly put any effort to start the given task unless the teacher or the assistant made a move to lead him with the task. Sometimes he was very moody, and ignored his teacher's questions.

In terms of communication, he was very selective and responded very well to only some topics such as animal and food. However he frequently changed the topic whenever his mind came across another thing at any point of the conversation. In addition, he frequently called out answers and sometimes produced irritating sounds in between the lessons. He likes calling names at others and occasionally called Nishan with negative words. He seldom responded to questions he was not interested in. Nonetheless he was never aggressive.

In general Rizam impulsively answered questions without thinking of alternatives, frequently commented on peripheral noises or objects in the room that were unrelated to the task at hand and frequently asked questions such as when the task (game) will be

over, or what's next. In line with Miss Hana's perceptions, Rizam sometimes did the work given for a short while or put an effort to start the task after being pushed by an adult, but never finished it as he moved around the class or hangs around looking for another task.

b) Informal interviews with Rizam, his peers, assistant teacher, and teacher

As Rizam's dependency attitude was noticeable from the first observation, the researcher tried to find the real reason for the stance. In a drawing session, Rizam asked the researcher to do the drawing for him. During the chatting in the occasion, he claimed that he couldn't draw because he does not know how to. The researcher showed him the steps for the task using another piece of paper, and then encouraged him to start the task. He insisted for help and kept saying that he did not know how to do the activity and stated that he disliked written (paper and pencil) activity because it was difficult. On the other hand he claimed he was good at video games as he won all the games with his father or his sister.

On one occasion, Rizam and the researcher replayed the 'situation tape' recorded during the lessons. Rizam recognised his own voice as well as others' voices and part of his voice shouting with the word 'liar'. When asked regarding the word (he actually repeatedly used to accuse others in class), he revealed that he learnt it from his neighbourhood peers. He claimed that it was not a bad word. However when one of his peers butted in and told the researcher that Rizam was a liar himself because he told the class that he had a rabbit at home (during the morning talk session) but it was not true. Rizam was really upset and vocally accused the peer of being a liar. He became very moody after that.

From the informal discussion, the assistant teacher seemed to have concerns more for other pupils in the class as some were less fortunate whereby Rizam was fully attended by his family and his teacher as well. She did not see much problem in Rizam's

behaviour in general but realised that the boy was not focused in learning. She had to manage the class when the teacher was not around, she claimed that more provision was put on Rizam to avoid inconvenience or arguments amongst the pupils.

In terms of teaching strategies, the teacher plainly followed curriculum guidelines to prepare classroom activities. She was not sure on the effective approach for Rizam but realised that some activities were not attractive to Rizam for learning commitment. She professed that teaching Rizam was very challenging and she learnt many things as she experienced many unexpected incidents. Nonetheless she assumed the situation could be more difficult if she had 25 pupils in class.

8.2.1.2 Rizam from Miss Hana's perceptions

Miss Hana had been teaching Rizam for eight months since January 2001. She described Rizam as excessively dependent on an adult in doing tasks. According to Miss Hana, Rizam was behind in some aspects of learning owing to many reasons. One cause she believed was the approach to upbringing. In presenting this she said:

> "he was really pampered by his family, his sister did handle everything for him in school. The sister took his shoes off in the morning (before he enters the classroom) and bought him food during the recess time. She regularly comes to this class, hanging around until the bell rang just to be near to Rizam. He is sort of spoiled and most of the time hoped for others' help in his work. Someone has to sit next to him, then... he will do his work. Luckily the number (of children) for this year was small... (eight), I spend some time for him, I mean for personal attention, if not..... I do not know what will happen to him. (tak tahulah macam mana)" IH(M1:5)

In a later part of the interview Miss Hana included another example to support her claim that the boy was ruined by the way his family amused by stating that:

> "Rizam is not totally problematic. Please do not misunderstand me, but I strongly believe that the way his mother pampered him made him dependent on others, so much so, he lost confidence to be independent. His mother used to wait at the door (pointed to the classroom's door) and put his shoes on almost every day when she fetches him at 11.30 am". IH(M1:9)

Regarding Rizam's behaviour in the classroom, Miss Hana used the term 'offhand' as Rizam was always commenting on something not related to the task such as peripheral objects or noise in the class and as he never takes tasks seriously, he needed to be pushed to start the task. She applied the term 'moody' to illustrate the boy's habits in choosing the class activity and selecting friends he likes. Rizam likes activities that he could have under his own control or of short duration, for example drawing activity or free play. Hence he seldom finished his task.

In revealing Rizam's poor habits, Miss Hana mentioned a few incidents at the beginning of the school year where Rizam was really difficult to handle. She used to lock the classroom door so Rizam could not simply go out the class and hang around the school compound at any time. Rizam used to be violent and destroyed teaching aids and material prepared for lessons at the beginning of the year. Miss Hana admitted that as a freshly graduated new teacher, she was unable to manage the behaviours. She finally requested the parents' involvement to solve the problems and they chose the approach where one of the parents (the father mostly) was to be with Rizam in the class until he settled with his new experience in school life. After he got used to the new situation, his difficult behaviour decreased but some of the behaviours still occurred such as grabbing material from others and using abusive or irritating words to peers. Other than that he likes to bring some irrelevant things to school such as his sister's toys and clothes or his mother's rolling pin.

In terms of commitment in schoolwork and learning tasks, Miss Hana described Rizam as "only 5 minutes the most he could stay on a task". This was for something new or he has interest in. Otherwise if a routine task or something he learned before was discussed; he would just enter his "day dream affinity", or just explore the outside (class) or request another task. Nevertheless, Miss Hana was confident that the condition will improve as Rizam become more mature in future. Her confidence was based on the progress he had achieved in eight months.

8.2.1.3 Vignette 1 (Rizam and the laser pointer)

Rizam curiously opened the kitchen door and peeped in as Maza (the comparison peer) was doing " a line for a walk" activity with the researcher in the preschool kitchen. The assistant teacher signalled Rizam to go away. In a short time he put a second attempt to come in the kitchen. The researcher called him in as Maza was finished with the activity.

Rizam immediately sat on the chair (purposely put for the activity) without waiting for researcher's instruction. He asked some questions connected to what he saw while he peeped in before, such as "what did Maza do with red light on the floor?" The researcher told him to find out from Maza himself. He was not satisfied with the response and bluntly said, "I know ...you have a small torch light (lampu picit)". As a response, the researcher offered him to play the same activity as Maza, provided he followed the researcher's instructions. Rizam promised to comply.

Upon starting the activity, Rizam asked if the researcher had any reward after he finished the activity (the researcher used sweets and chocolate as a token from the first visit in order to get close to pupils in the class). The researcher replied with 'if you complete the game very well I will consider giving you some sweets" and he continued to track the moving red point on the floor. As the researcher directed the pointer to point at the objects hang on wall, Rizam grabbed the researcher's hand in his attempt to touch the pointer. He stared at the pointer for a few seconds and continued the tracking. He spontaneously broke out asking what type of the sweet the researcher had and refused to continue by saying " I'm tired! Can I have the sweet now?"

8.2.2 Mahdi - Ms Irah

8.2.2.1 Mahdi from unstructured observations and interviews

Mahdi is the youngest in the family of three. He was adopted when he was a newborn. His brother and sister were adopted as well. There is a huge age gap between Mahdi and his siblings. Both of his siblings stayed in different places. His mother is a single parent and she works as a petty trader, selling home-made traditional cakes at the roadside. His natural mother gave him up (his other natural siblings as well) for adoption due to his natural father's bad hard-core drug addiction.

In terms of health Mahdi has no record of serious illness. Physically he was small and thin compared to his peers. His face was apparently innocent with sombre expression.

a) Unstructured observations

The observations were carried out over five days, whereby the time was used for structured and unstructured observations. The first day was used to familiarise the pupils with the situations where I was sitting in at the corner of the temporary class (school hall) with the tape recorder and the coding sheets procedure or taking part in class activity.

Mahdi was observed in the natural classroom preschool activities for five days. He arrived in school on time everyday as his mother walked him to school on her way to her stall. He frequently yawned a few times before settling down in "morning talk" sessions.

It was obvious from the observations that he forgot his homework or books almost everyday. The assistant teacher provided him with work sheets (photocopy of the pages where the work was on) for alternatives and pasted the sheets in the book later on.

Academically, Mahdi was not acquiring reading or writing skills but he managed to identify some alphabetical letters used in spelling his own name. In completing written work, he often spent a long time waiting for someone to lend him a pencil or eraser (as he lost the stuff most of the time). Otherwise during individual attention, he copied the words from the blackboard and repeatedly erased it in order to amend his writing. As he wrote and erased at the same spot for many times, the pages became shabby and messy, and on some occasions the page was torn. As a result, most of his workbooks were grimy.

Mahdi was eager to compete and show that he followed teacher's instructions especially when the teacher promised a reward to those who behave themselves. For example, on two occasions, when he was working on his own, he deliberately focused on writing something in his book as his peers were busy on their written work. Nonetheless he was actually drawing or scathing something unrelated to the task. He revealed that the object he had drawn was an aircraft but his drawing was more like a patterned scribble.

Inexplicably, as mentioned above he lost his pencil and eraser almost everyday. On the first day of observation he lost his pencil and while waited for the teacher to get him one, he stared at the researcher's pencil case. The researcher offered him a pencil and an eraser with the condition that he returned the stuff after he finished work. He used it until the mealtime and left the stuff on the floor (he was working on the floor), as he walked out to line up towards the canteen for meal. After the recess/mealtime he lost the pencil/eraser as well.

In line with his teacher's description, he had no initiative to borrow it from others, he just stared at his friend's stuff. A few times he touched the stuff while he looked at his friend's face and retreated when the friend reminded him with "That's mine!!". Mahdi was frequently lost in class discussions as he daydreamed or looked away. Interestingly, despite his inattention, he always volunteered to answer teacher's questions. However he usually gave the wrong answer or something unrelated. Whenever the teacher asked

for opinion or idea, he was among the first to put up his hand. On a few occasions the teacher gave him a chance as he put his hand up, then he stood up, smiled and looked at his friends' faces. He then imitated whatever words uttered by his friends as his contribution to the discussion.

Throughout the observations, there were only a few times when Mahdi answered the questions correctly when the teacher purposely gave answerable questions in order to make him feel better after he failed to respond correctly, or after he was verbally punished for his behaviours. He was obviously cheered by the teacher's good remarks.

In one story telling session, the teacher used a story from a big book. As some of the pupils had already acquired reading skill, the teacher asked one of them at a time to take turn read the paragraph in the book. In spite of not yet having acquired reading skill, Mahdi persistently put his hand up and requested a turn to read the book. When the teacher gave him the opportunity, he smiled and took up the book and modestly said/read words, which were not written in the page. He was actually repeating some words the assistant used when she read the book for him earlier in the day (revealed by the assistant teacher).

Mahdi was nick named as 'buah hati cikgu' or teacher's sweet heart as he was always seated in front of the teacher's eyes and the teacher regularly uttered his name during the lessons as he went off task or disturbed others. However, he seemed not to acknowledge the terms as he gave no response when the teacher asked "where is my sweet heart?". The teacher uttered the words most of the time Mahdi was hung around. During the informal chatting with the researcher, Mahdi revealed that he knew the word "buah" or fruit and he gave guava as the meaning of the word and he refused to answer the question on the word "hati" or heart in this context.

In terms of interpersonal ability, Mahdi was vulnerable in interpreting verbal and non-verbal communication, as he did not respond accordingly to friends' jokes or teacher's

punishments. For example, in one occasion, Mahdi was punished for 'group clapping' inappropriately during the lesson as he imitated his neighbours' action. The teacher called the group to stand up in front of the class and did the same clapping until they were allowed to stop while she continued the lesson with the others. Mahdi happily did the clapping until he felt fatigued (more or less 20 minutes) and instinctively told the teacher that he was tired to continue whereby others in the group reluctantly did the clapping and turned their face down looking at the floor.

Mahdi was easily distracted and lost his focus during the lessons. It was typical for him to engage with playing something close to him or otherwise play with his own cloths or just simply fidget with his feet or hands. On many occasions during the "morning talk" sessions, he alternately put on and took off his socks. As the pupils were sitting on the floor, his behaviours were hardly seen if the teacher who was focussing on the whole class. He told the researcher later in the day that he felt itchiness at his feet as the reason for the behaviour. Other than that behaviour, he hugged a friend in front of him or simply lay down and put his head on the peer's lap who happened to sit behind him during the sitting on the floor activity. It was obvious that one of the peers who always sit next to Mahdi in many occasions was Hamirul. The teacher separated them the moment she realised that, as they teased each other or played with something close to them, or if not they disturbed others. The teacher labelled Hamirul as in the same situation as Mahdi "playful and forgetful".

Other distinctive behaviours during Mahdi's written work were hanging around and daydreaming as mentioned earlier. He basically hung around with the reason to sharpen the pencil or colour pencils at the dustbin at the corner of the class. Most of the time he did not return to his seat until the teacher called him or the assistant pulled him back. On the other hand, he normally engaged in daydreaming when he lost his pencil or eraser, as he has none to start work. On some occasions the teacher asked him to borrow the stuff from his friends in order to make him more sensible and to initiate him in verbal interactions. Though the teacher did tell him what to do and encouraged him to

solve such problem, most of the time he just waited for the teacher to borrow on his behalf.

The friends with whom he played and chattered during the recess/meal times were those in his group, which was considered by the teacher as 'those having problems in learning'. However in term of devotion, he always complied with the teacher's instructions but he did it wrongly and needed a close guide from an adult. Mahdi was not very vocal in nature as he uses very little verbal communication compared to others. He imitated words or phrases used by others either immediately or sometimes later in his verbal utterance and in some occasions it was not appropriately used. Mahdi was never aggressive nor grabbing any material.

In general, Mahdi was weak in communication, off task most of the time, frequently playing with objects in the room that were unrelated to the task at hand, frequently he showed his interest to get involved in the activity by meaninglessly following his peers' actions. From time to time he moved around the class aimlessly.

b) Informal Interviews with Mahdi, the peers and the teacher

In terms of physical development and health Mahdi was portrayed (by his mother to the teacher) as very active during his toddler age and on a few occasions he was slightly injured when he fell down from the table and the stairs. His navel bled occasionally and it sometimes still occurred without obvious causes. The problem was prolonged and he was under observation. Mahdi was not interested when the researcher asked him about his family or his personal life such as the navel problem. He replied with " don't know" to most of the questions during the chatting.

The teacher revealed she realised that Mahdi played with his clothes when he lost interest/focus in the communication. She admitted that sometimes she lost control as she used verbal punishment though she knew that it led to nothing that was beneficial to

him. She conveyed that within the limitation of knowledge and skills, she ambitiously tried to shape Mahdi's learning behaviours.

8.2.2.2 Mahdi from Ms Irah's Perceptions

In describing Mahdi's conditions, Ms Irah considered him as the worst in the class in term of academic achievement and social skills compared to other pupils in the class who were very slow in learning or having specific difficulties. She supposed that the nature of Mahdi's background compared to the peers in the class was not leading to any advantages for his learning process. Most of the preschoolers in class had attended preschool in other agencies before and some had acquired basic reading and writing skills when they started the preschool in January. She said:

> "...I think Mahdi was far behind in many aspects (of his development) because he was taken care by a foster mother and she is too old to take the responsibility whereas her other adopted children are grown ups (stay away). She has no time to guide Mahdi because she spends her day time at her stall and at night she has to prepare the kuih (food) for the next day sale..... After school, ...Mahdi (spends his time) just hanging around at his mother's stall without proper attention" II(M1:3)

To make her argument even stronger, she used the rationale as below:

> " I made the conclusion that Mahdi has lack of attention because there is a different effect when I gave him an individual attention. I used to punish him when he did not do his work or he was slow in his reaction to my instruction, but I didn't see any improvement (perubahan), I tried other strategies such as using a reward (for any good behaviour) and personal attention and gave him a small amount of task, and .....(tremendously) his behaviour improved and did much better in his work .....(though) slow, still slow. He started from zero..... His mother once thanked me for the change in Mahdi's behaviour (at home) as she thought the improvement was due to my teaching approach " II(M1:6)

On the other hand, Ms Irah imagined that Mahdi's future in learning would be complicated since he was very slow in many things and the most difficult to manage was his lack of attention to the task. She emphasized the problem by stated that:

> "We are now in the second semester (of the school and the primary year one is very close by). If I gave him some written work (at his pace) and I guide him personally..... then go on to (guide) attend to other pupils for a while and came back

> to him he just did nothing. He did not even manage to write a letter on the line (she showed the example to the researcher) because when there was no personal attention, he drifted away (day dreamed) and forgot about the task. ..... He came to school without a pencil or sometimes with an empty pencil case. His mother frequently conveyed her concerns on his forgetful behaviour, as she cannot afford to buy him pencils and other things almost every day and in addition he always fancied his peer's pencil or eraser (not simply any type of pencil)" II(M1: 8)

Ms Irah perceived Mahdi's behaviour in the class as 'playful' as he recurrently hugged his friend in front of him, played with things (objects) close to him or simply played with his clothes, while the term 'ligat' or very active was used in describing his condition during free play as he actively played; he was cheerful compared to his performance during the lessons. She rationalised her perception by taking the condition as not a problematic pupil but rather exceptional needs in teaching circumstances.

8.2.2.3 Vignette 2 (Mahdi and the laser pointer)

Mahdi curiously gazed at the researcher's hand to know the activity set by the researcher for him individually but he didn't say anything. He followed in a step behind when the researcher walked to the backstage of the school hall (the preschool kitchen was under renovation). When one of his friends questioned him about where he was going, Mahdi spontaneously said " do your work!, I have something to do": the same expression was used by his teacher every time she needed to leave the class for a short while.

Using a laser pointer, a moving red light was produced along the floor. Mahdi was asked to focus to the moving spot. He complied with the instruction but looked at the researcher's hand on and off. The tracking was continued and it went through certain objects on the floor (purposely set: plastic spoon, toys and blank A4 paper) as well as the objects hung/attached to the wall (the clock, the picture, and a roll of carpet) and back to the other side of the floor. Mahdi was fidgeting and off focus from the tracking for many times. Second task was to name the object where the red spot passed by in the tracking. He rubbed his head and looked at the researcher, seemed lost and failed to

name any of the objects, which were always there to recall. The same activity was repeated, yet he could not answer the replicated question. To counter check his understanding, the researcher asked Mahdi the name for every related objects one by one and he managed to name them correctly. The activity was repeated for a third time. Mahdi managed to give three of seven objects. He was given some sweets for his cooperation in the activity.

After chatting for five minutes and he ate one of the sweets, the second activity was carried out. Mahdi was given the laser pointer and his task was to track the same route used by the researcher. He was obviously excited and fidgeted for some time. He tracked the ant on the floor for a short while before he moved the point to circle around the ant a few times, and then changed the direction to the wall and the ceiling. Upon returning to the class, Mahdi showed off the sweets he got and said to Hamirul " go and play (in order to get the sweets)!" (Note: sweets were given to every in the class before school was dismissed)

8.2.3 Justi - Ms Mizam

8.2.3.1 Justi from unstructured observations and interviews

Justi is third in a family of five. His father was a lorry driver while his mother was a fulltime housewife. Justi was a quiet and cheerless boy. Throughout the observations he seldom talked in the class. His ambition was to be a fireman. Typically Justi arrived in school late in the morning as his mother took him to school by bus. His attendance record was fairly poor and the longest non-stop absence was two months period in the middle of the year of 2001 when his mother gave birth to his youngest sister.

a) Unstructured observations

The observations were carried out for four days. (The observations were planned for five days to cover the structured and unstructured observations. However he was absent in the second day of the observations). The first day was used to familiarise the pupils to the new situation. (The researcher used sweets and more toys/books to build rapport with pupils because the teacher briefly told earlier about Justi's reserved attitude towards people he was not familiar with.)

The unstructured observations were carried out over four days as mentioned earlier. On the first day of the observations, while the researcher pretended doing some coding procedure in order to familiarise the pupils with the coming observation situation, a jar of sweets was displayed on a table. During the mealtime, one girl came to ask for some sweets. The others followed and their teacher asked them to line-up. Justi was the last to approach the researcher for the sweets. After meal time the researcher joined the class in singing activities. Justi was very reserved and tried to avoid sitting next to the researcher.

There were some noticeable patterns of Justi's behaviours during the unstructured observations. For example, during the sitting on the floor setting, he changed the way he was seated (hugging his knees) the moment he lost his focus on the current task. Typically it was followed by a prolonged looking away such a daydreaming. Another instance of pattern observed was when he withdrew from activity when it came to individual presentation or response/answer whereby he always complied with instructions which involved the group or whole class activity. Nonetheless he was behind in most of his participation in the group activities. Additionally, it was noticeable that he had the courage to voice his views or answered adult's questions only in an indirect way. He never replied openly to questions asked but when the same questions were used to ask his neighbour he butted in.

In terms of academic achievement, Justi yet to recognise letters, but managed to differentiate some numerical symbols. He focused on the task in the academic lessons for a very short time and then looked away or day dreamed all the day as most of the tasks were related to reading or writing, in particular to matching words or numbers in the work books.

Justi seemed lost and confused in the cognitive oriented task whereby in the manipulation oriented task, he seemed always a step behind his peers. He apparently looked away from task especially in response to noise or visual distractions. The similar condition occurred even during his most preferred tasks, colouring and physical activity. His mind seemed to drift away easily from the lessons and in most circumstances he gazed at the moving vehicles moving on the nearby road.

In pencil and paper (written task) activities such as colouring, Justi complied with the instructions though he hardly finishes most of the tasks. Sometimes he just pretended working on the task but he did something else irrelevant to the tasks given such as working on different pages of the workbook. For example he was working on a wrong task/page for a short time, and then glanced at others' work to compare. When he realised his was different, he hung around from one table to another to ensure the correct page for the task. He made no effort to ask the teacher or the peer next to him.

Justi was not verbal in nature but occasionally said offensive words that upset others. In one colouring session, he stayed on task for quiet long as the teacher was guiding him individually, and after the teacher moved to another pupil, he instantly peeped at his neighbour's work and commented "messy" (the word his teacher used to remark on his work before she moved to guide another pupil).

In general, Justi hardly replied verbally to the adult's questions and seldom talked to his peers and he used more non-verbal indications in responding to others' interactions. He

was not eager to explore new things or new experiences, apprehensively withdrew when he saw unfamiliar adult/s in the class.

b) Informal Interviews with Justi, his peers, and teacher

As the researcher entered the classroom at 8.00 am on the third day, Justi just stared at the things the researcher placed on the table (provided by the teacher), while other children came and looked at the books, touched the toys even some were playing with it. One student recorded his singing voice and replayed it so he could hear his own recorded voice. Justi was delighted with his friend's voice on the tape but it was not long before he turned to look at the moving vehicles/cars on the main road close by.

Then it was time for the first lesson, the pupils moved to their own seats. Most of them were busy preparing to hand in their homework to the teacher, Justi just stiffly stood at his place and looked around because he was absent on the previous day; the second day of the observations.

At 9.30 am, a girl who had completed her current task came to the researcher asking for permission to use the tape recorder (with twin microphones). She had missed her turn the previous day as the class was dismissed at 11.30 a.m. As she got the 'go ahead' sign she look for a friend to sing along with her. The researcher suggested Justi as her singing partner. She seemed to disagree by whispering to the researcher "he doesn't know how to sing,..never sings when teacher asked him (to sing in the class)" Then the researcher called Justi to the researcher's corner (with the teacher's permission) and asked him if he would like to sing with the girl. Before he could answer the question, a few other pupils nearby spontaneously said " teacher!, he cannot sing!" (the pupils addressed the researcher as 'teacher").

Justi looked at them without a word, then looked at the researcher. Instantly the researcher replied: "who said that he cannot sing? Maybe he wants to show us his talent

today, let's ask him. How about singing with her, Justi?" He gave a pleasing smile and looked at the teacher who at the time was smiling at the researcher. Then one microphone was given to the girl and the other one was handed to Justi. The girl chose a familiar song and Justi just nodded his head. They started the singing after the researcher counted "1,2,3 ".

Justi sang with a very low voice and missed some part of the lyrics but the girl's voice was good enough to cover his absent voice. There were some signs of grouchiness, but the researcher signalled those pupils to keep quiet. The tape was replayed then, and Justi's singing voice could be heard quite obviously and the researcher pointed to the voice with a good remark 'see!, we can hear Justi singing in this tape'. Justi just smiled happily. The others said "but not loud (enough)!" The researcher replied to the comment with; "this time a bit low voice, because it's his first time recording I guess!". Facing to Justi the researcher asked: "Is it true your first recording Justi?" Again he just smiled to the researcher.

At 10.25 a.m., the pupils were colouring the Malaysian flag on an A4 paper. The flags were meant for the event in conjunction with the Malaysian Independence Day at the end of the week. Justi was at his seat doing the task while mumbling some sound. The researcher tried to figure out what were the words he mumbled. His teacher came to tell the researcher that she realised Justi actually was singing the song he sang with the girl in the tape. He was really amused by the chance to play with the instrument. He sang to himself until the class dismissed at 11.30. Before he stepped out the class, Justi came to the researcher and shyly asked in a low voice. "Can I play (with the tape recorder) again tomorrow?" Immediately the researcher assured him the chances and he walked off to meet his mother and sister who were waiting outside the class.

The following day, Justi arrived in school much earlier and his mother conveyed her doubts on Justi's eagerness to reach school early. His mother revealed that he woke up

on his own and dressed up without any fuss whereas he was normally miserable waking up in the morning. The teacher presupposed by saying:

> " Maybe he enjoyed the activities for this week, particularly the dancing, as it is the merdeka week (Malaysian independence day)..... Less academic lesson" FN(SU3:4)

(As an educator the researcher was very pleased to hear that Justi was eager to attend school and at the same time wondered if the change could sustain)

8.2.3.2 Justi from Ms Mizam's Perceptions

Ms Mizam described Justi's character as basically not interactive and frequently 'termenung' or pondering in the class activity and the term 'melopong' or empty minded was used to express her observations on his typical behaviour during the lessons. Ms Mizam stressed that the problem was more on his lack of interest in the class activities. To illustrate the situation further the teacher said:

> " ...he never shows any interest in learning. While others were busy carrying out tasks or activities or to answer my questions, he just stays quietly empty minded, without any inquisitiveness he stared (at the things outside the class) away. To make him engage in any task I had to sit next to him and guide him 'personally'; ...then he just did it for a short time before he abandoned the work as he was pondering and looking around again and again .....until he get another personal attention..... Then his work was messy and never complete" IM(M1: 1)

Justi's behaviours was presumed by the teacher as a consequences of parenting styles because other pupils who were staying in his neighbourhood notified her that Justi's father was ferocious and to support her assumption the teacher stated;

> " As I mentioned to you before, he is difficult to manage ....as to make him do any tasks, he needs personal attention. I don't know the real cause but I'm pretty sure he has no interest in learning..... If I force him he will cry, sometimes up to 11.30 am. On one occasion he screamed loudly until another teacher and pupils next class surrounded the preschool class as they thought something serious has happened. On a different occasion, he wept with a high pitch until other preschool pupils got confused (*pening*), ... closed their ears ..... and sorry to say, nothing can stop him except his parents....I mean until his mother or his father came at 11.30 a.m. to fetch him and shout at him (ordered him to stop crying)." IM(M1: 12)

In terms of teaching strategies, Ms Mizam admitted that she has limited knowledge in teaching children with exceptional conditions. She confessed in her statement as below;

> "I observed that he was not active in learning..... of course without any interest (he would not take part). Maybe his interest has not yet exist or..... I myself am not good (not skilful) in boosting his interest for learning" IM (US: 2)

Ms Mizam used the term 'unreceptive' in the later part of the interview to describe Justi's character. She labelled him as from a 'pelalak' family as both his elder sisters were behaving in the same manner during their preschool time namely crying and wailing for long periods, and inconsolable, stopping only when the parent told them to stop crying. Ms Mizam interpreted the situations as exploiting wailing strategies to avoid the task (His elder sisters were in the same school and were taught by Ms Mizam previously). According to Ms Mizam, other pupils in the class were not very keen to accept him in their group during the activities and some peers were avoiding him because they worry in case some unintentional incident during the activities or during mealtimes, he may cry unreasonably.

8.2.3.3 Vignette 3 (Justi and the laser pointer)

Justi was sitting on a chair in the preschool kitchen waiting for the activity (a line for a walk) notified by his teacher. He stood up when the researcher entered the place and smiled as a response to the researcher's question "are you ready for the game?" He sat down when the researcher said "good!".

Justi followed the researcher's instruction and smiled and shook his head when the researcher asked if he had anything to ask. He tracked the red moving spot carefully until the end. He stared at the researcher and smiled when the researcher praised him for successfully following the instructions. He was given two sweets as a reward.

The following task was to track the same route used by the researcher using the same laser pointer. Justi held the laser pointer firmly and tracked the same route. At a certain

point of the tracking, he turned the red spot to a moving insect until the researcher told him to speed up and he completed the task successfully. He just nodded his head when the researcher asked him about the game (how about the game?). He continued to track another ant on the floor and stopped the tracking after the animal disappeared under the cabinet. He then immediately returned the pointer to the researcher. He cheerfully smiled after he received another two sweets from the researcher. (*Note*: The task where the pupil was asked to name the objects passed by the red spot was accidentally skipped)

8.2.4 Abdul - Ms Sali

8.2.4.1 Abdul from unstructured observations and interviews

Abdul was the fourth in a family of six boys. His father was an odd-job worker whereas his mother was a factory worker. They stayed in a city council flat about a hundred metres away from school. Physically he was considered tall compared to his peers and big-sized for his age. He frequently fidgeted and walked on his toes most of the time. Consequently he moved in a gawky condition. His ambition was to be a doctor.

a) Unstructured observations

The observations were carried out in seven days. The first day was used to adjust the fieldwork procedures as the observations were meant to gain data from two pupils with ADHD (Abdul and Hafzi, the next case) in the same class as well as to build rapport with the pupils.

Abdul was frequently late and arrives in school after the class has already started every morning. Consequently he always rushed to the class and stepped in hurriedly, he took a brief rest in his seat before he joined the class in 'morning talk activity'. On one of the observation days, he forgot to take his shoes off and some of the peers laughed/teased him. He seemed embarrassed and his mood was swung for the part of the

day. In line with his teacher's description (the informal interview), his affective state was easily affected as he was occasionally moody and sensitive upon uneasy reaction. This was demonstrated on some occasions during the observations, where his mood suddenly changed when he felt irritated and it took some time to recover. There were incidents observed where a friend next to him threw a negative comment on his work during a drawing/colouring activity and at a different time a friend criticised his belonging (school bag) during their chatting. On both occasions Abdul became angry and he furiously stared at the friend for minutes before he calmed down.

Abdul was very concerned with his belongings, and kept his things in order before he left the class at 11.30 am every day. On two different occasions, he realised that some of his stuff were missing, and he made an effort to get it back by consulting the adults in the class.

During mealtimes Abdul was among the last to finish eating. Every day he asked for extra food as he enjoyed the mealtime. "Delicious" was the word he uttered while he handed over his bowl to the adults every time he asked for extra food. He fidgeted frequently while he sat cross-legged on the floor with others during the mealtime. The same peers were seen sat next to him (his left and his right side as they were in a circle shape sitting on the floor) in every mealtime even though free sitting was applied. He sometimes teased the peers next to him or chattered with them but there were obviously fewer responses from both of them. The teachers revealed that these particular peers tolerated his behaviour from the beginning of the year.

There was an obvious pattern in his favourite topic of warming-up discussion in the "morning talk" sessions. The teacher used the session to cheer up the pupils and every one of them was given a chance to briefly tell anything related to the chosen topic. Abdul gave more attention in discussions on fruit, food or vehicles, as was later confirmed by his teacher.

The classroom activities were mainly carried out in two different settings: the pupils sit cross-legged on the floor and the pupils seated at their desks in a fixed group. During the sessions where the pupils sat on the floor, Abdul was frequently playfully hugging a friend next to him or drawing something on the pupil's back that was seated in front of him, and another time he looked around. A few times he drifted away engaged in daydreaming. On some occasions the teacher put him seated in front of the row so she could monitor him closely but the pupils behind him were not happy with the sitting arrangement because he blocked their view. He was apparently sensitive and annoyed with the hassle and moved aside with a squirmy face.

Abdul was among the last to finish a written task though he was given less amount of work. He was easily distracted by noises or voices and consequently he looked away from his task. He tried to improve his work by repeatedly erasing the untidy work.

In general, with significant encouragement from the teacher, Abdul completed his work most of the time and actively took part in class activities. He was behind his peers in the quality of his work as his attention was frequently dislocated from the task. Nonetheless, he successfully managed his anger or uneasy situations as described by the teacher.

b) *Informal interview with Abdul, his peers and teacher*

During one conversation with the researcher, Abdul requested a copy of his photograph taken during the physical education lesson. He revealed that he has a new photo album. He also mentioned about the things he likes in school and at home as well. He liked the mealtime in preschool and the game as well as the toys he could play with during the free play. He liked to stay at home for his favourite television programmes. He admitted that sometimes he watched night programmes and overslept in the morning. However, he gave other excuses for being late in the morning such as a problem with his

shoes (these were torn and he wanted new ones but his mother gave him his brother's old shoes; he was frustrated)

Abdul named a few "best-friends " in the class and he assumed that they like to be friends with him as well. He smiled and gave no verbal reaction to the questions on the reasons he liked the friends he mentioned. He revealed that he liked his teacher because she was kind but gave no feedback when asked about the assistant teacher. He was not interested to talk about the previous preschool he attended (for two weeks).

Abdul revealed that his work was good and tidy. To prove it he showed some of his previous work marked by the teacher with double stars. He stated that he wanted to be a doctor because he could help sick people. He said, "only clever people can be a doctor" as the teacher told him so. He also revealed that his mother gets angry if he lost his things and he checked his pencil cases before his mother did so. Relevantly, he detected his missing colour pencils by matching the colours marked at the upper part of the box.

The teacher revealed that in dealing with Abdul's sensitivity and moody conditions, she had tried many ways as she realised that the effective way seemed to be suitable for a certain time or day but not on all occasions. In doing that, she guessed the best treatment before she reacted to his difficult conditions and if it did not work, she tried other ways.

8.2.4.2 Abdul from Ms Sali's perceptions

Ms Sali set out her views on Abdul by describing his difficult behaviour at the beginning of the year. She revealed her strategy in coping with it as well as her adverse experience when his mother misunderstood her approach. She used the term 'bully' to explain the initial aggressive situation and 'bullet' to enlighten his physical movement in the class.

She depicted the early circumstances of Abdul's situation with her statement as below:

> " Abdul was enrolled to this programme two weeks later than others,... I mean after he was rejected by a private preschool nearby. I knew the reason he was refused (by the private preschool) after two weeks (attending the class) because his ex-teacher is my friend but I accepted him as there was a vacancy in this class. The first day in this class, I partnered him with Adha because Adha is an outgoing boy and tolerable. Unfortunately he bullied and used insulting words (four letters words as well) towards Adha". IS(M1: 5)

To illustrate the subsequent condition she said:

> "He took control on many things in the class as he was (extremely active) proceeded like a bullet .... I called his mother to discuss his condition (learnt that his behaviours at home were the same).... And she pleaded for (teacher's) any workable way and she promised to fully cooperate. Difficult !. Within two months, his behaviours were really interrupting others, as he was frequently aggressive. He grabbed others' things or toys and he conquered all the game devices for himself. Then I called him and told him nicely (pujuk) how to behave, so people will like to befriend him.... I used simulation .... The condition improved gradually except for his verbal violence and his attendance problem" IS(M1: 9)

Ms Sali described the other conditions that difficult to deal with as in her assertion:

> " He is frequently absent, sometimes only one (day) for a week (turned up) .....(and) for sure he was not in attendance at least once in a week. Otherwise he arrived late in the morning (up to 9.15 am) most of the time ..... (despite the fact that he stayed at the council flat only 50 metres away). He was absent for two weeks once, and came back to school with the old bad habits after that. I wrote a letter to inform the parents but (there was) no response, and (followed by) I rang his mother on his attendance issue and reminded her that if (Abdul) absent for more than two weeks without any reasons, the school will dismiss him from the enrolment. There was further improvement after the discussion as he arrived in school just a bit late...8.00 a.m. (compared to previous time). Even if more than two days (he is absent), I will ring his mother and in addition I regularly chatted with him on/about the advantages to be in class on time everyday.... I narrated (*cerita)* to him the consequences for being absent regularly....". IS(M1: 13)

As many of the ways she used to tackle his verbal misconduct were fruitless, Ms Sali used a radical approach to stop the habits. On one occasion she threatened him to deposit a fresh chilli on his lips if he ever said such words again. She then immediately took out the chilli and showed him as he uttered the words. According to Ms Sali, he was dreadfully attentive at the particular moment and finally promised her to avoid the words in the future. Unfortunately his mother misconstrued the action and complained to Ms Sali's friend (the other teacher in the school). Ms Sali rang her and

invited her to come to discuss the matter and clarified the issue. On top of these approaches Ms Sali realised that some topic or methods were more effective in motivating him such as the reward she used that made him cut off the habit impressively as she said:

> " All the strategy I used was on a trial and error basis but I never forget to praise him for not uttering the bad words when he was dreadfully upset or angry (as habitually he did). I recognized that rewards and praise were effective for this particular child as his work improved a lot (by this approach) though not at par. ....another things (should mention) is about his interest, meaning that he just pay attention to the work within his interest" IS(M1: 12)

In terms of overall progress Ms Sali claimed that Abdul was gradually picking up the skills, and apparently acquired a great improvement in his aggressive manner and social skills. She perceived the state as not problematic as most of his unpleasant habits had diminished whereas, she believed, in order to deal with children's behaviours the teacher should be aware of some typical behaviours for children who were brought up in rough surroundings like the city council flat settlement.

8.2.4.3 Vignette 4 (Abdul and the laser pointer)

Abdul entered the kitchen for "a line for a walk" activity with a curious expression. He sat down on the chair as requested. He smiled and quietly explored the room. He just nodded his head and at the same time said, "yes" to the researcher when asked whether he was ready for the activity.

As the researcher pointed the laser pointer to the floor mat, Abdul looked intently at the researcher's hand to find the source of the red spot on the floor. The researcher briefly showed him how the pointer works and requested him to focus and track the moving red spot with his eyes. He tracked the spot half-heartedly as he was interested more to see the pointer. He managed to track the red spot until the end of the task. During the tracking he looked at the researcher's hand on and off a few times.

The following task was to name the objects passed by the red spot during the tracking. Instead of the name of the objects, Abdul pointed using his finger to some of the objects and simultaneously said "that one" to each of the objects he pointed at. The researcher counter checked his understanding of the objects by asking him to specifically mention the name of the particular objects. Abdul named these correctly.

The subsequent task was to track the same route as the researcher did using the laser pointer. Abdul cheerfully smiled when the researcher told him about it. He was obviously excited and clutched the pointer eagerly while he pointed the red spot to the floor. He traced the route a few inches before he made a variety of shapes by circling the red spot on the floor, the wall as well as the ceiling. Towards the end of the task, he pointed the red spot to the wall and then looked at the researcher's face. Abdul stopped the activity immediately when he was told to do so. He hesitantly returned the laser pointer to the researcher. The researcher thanked him for his cooperation and gave him four sweets as a reward. He smiled pleasantly and walked out. He pompously told one of the peers about his experience with the pointer.

8.2.5 Hafzi -Ms Sali

8.2.5.1 Hafzi from unstructured observations and interviews

Hafzi is the only boy in a family of two children. He was calm, neat, well-dressed and a very pleasant looking boy. He was a quiet boy, speaks with soft voice and frequently smiles. Physically he was about his age. His mother was a nurse and his father was a soldier. They stayed in a terrace house about one kilometre from the school. He travelled to school together with other pupils by privately employed mini bus.

a) Unstructured observations

As mentioned in 8.2.4.1 above, observations were carried out over seven days where part of each day was used to observe the other pupil with ADHD in the same class (Abdul). Hafzi comes to school regularly and arrived in the class quiet early in the morning as he was fixed to the bus scheduled time. He was not very talkative but liked to chat with his teacher early in the morning when there were no other pupils around.

Hafzi fidgeted most of the time as well as being out of seat. Interestingly, most of his out of seat behaviour was committed either when he stood up or detached his buttock from the seat while still working on a task or simply lying prone on the floor to finish his task. These behaviours occurred even during the time where he appeared to be interested in the task. He hardly hung around or bothered others though the teacher seemed leniently allowing pupils to move around in carrying out tasks. The class was under control with pupils choosing to work within their different styles.

Hafzi looked around more during activities which involved turn taking and sometimes the behaviour was followed by daydreaming. He forgot his things almost every day and lost he pencil frequently. On one of the observation days, he came to the teacher in the morning asking if she had seen his (school) bag. The teacher assured him that she saw him taking his bag when he stepped out the class (yesterday) and she asked him to recall where he was before he got on the school bus home. Then he thought for a while before slowly and consciously said "I put it at the canteen.... then played around.... the bus came (and) I forgot my bag". He never found the bag again. Yet, in line with his teacher perceptions, he can remember the facts and subject content he learnt which most of the other pupils couldn't. He was among the first to answer when the teacher asked something related to the previous lessons.

In terms of written tasks, Hafzi finished his task on time, and was mostly correct. However, the quality of his work was not at par and not well organised but with

encouragement he did it just slightly better. He seemed satisfied with his work and only tried to improve it upon the teacher's request.

On the other hand Hafzi was very helpful and concerned about his peers' needs and was aware of things happening around him, for example when he handed in his book to the teacher after finishing his work on pre-number. She praised him for finishing his task without any mistakes, yet the teacher told him to improve his writing. Then he slowly asked, "teacher, can I help Zin (a slow learner, seated next to him) to count his, because he asked me to teach him the calculation". He worked with Zin while his feet fidgeted all the way. It was noticeable that Zin and a few others seated close to him frequently ask him for help particularly during the pre-number lessons. It was perceptible that Hafzi was sensitive to his surroundings and was ready to lend a hand. For example, he willingly helped the assistant teacher to bring the plates and the cups to the kitchen and tidy up the space almost every day after mealtime.

In terms of participation during class discussions Hafzi used the appropriate terms and manner to convey his thought in particular to relate the subject to his previous knowledge. For example in one lesson the teacher was discussing "balanced diet". She asked the pupils "what happens if people take too much fatty food?" Hafzi responded to the question:

Hafzi: It will give a problem to our heart.

Teacher: Can you tell us more about it ?

Hafzi: The fat will cover and tie the heart and the heart cannot pump the blood to the whole (semua) body

Teacher: How do you know that?

Hafzi: My mom told me.

Teacher: Good, you gave a wonderful answer.

(The teacher clapped followed by other pupils). FN(SU4: 2)

b) Informal interviews with Hafzi, his peers, and teacher

Hafzi revealed that he liked to travel and spend his school holidays out of the city such as at his grandparents' place. He mentioned a few places in peninsular Malaysia he had visited. A lot of fun was the reason he loved to be there again. He talked about some activities played by his friends (relatives) in the 'kampung' or village, which cannot be found in the city. However Hafzi was withdrawn when asked more about his family.

In terms of schooling preferences, Hafzi claimed that he was good at numbers and that his teacher as well as his mother told him that if he is good with numbers, he could be a clever boy.

In a group chatting after class, five pupils were viewing the class photograph together with the researcher (without the pupils with ADHD). The researcher pointed to Hafzi's picture, and in unison they pronounced his name. The teacher asked them if they could talk about their best friend in the photo and they commented about many things related to the children and some other things unrelated to the photograph but none of them mentioned about Hafzi.

An informal interview with the teacher revealed much information on Hafzi. She was very generous in revealing the facts she knew and how she was sometimes confused. She assumed that academically Hafzi had very few problems as he learnt what ever way she used for teaching. Hafzi often told her about things that happened in the house or around him at home. Consequently she knew many secret things about his family. These are among the remarks used by the teacher to conclude her impression about Hafzi:

> "Sometimes he chatted like an adult, and discussed things that children at his age seldom do such as the financial problems he once overheard, faced by his parents". IS(M3: 15)

8.2.5.2 Hafzi from Ms Sali's Perceptions

Ms Sali in describing Hafzi's characters used the words 'active thinker' instead of a 'daydreamer'. She explained that Hafzi was forgetful when his stuff was concerned but he conducted himself differently from other pupils, daydreaming frequently in the class, although he did learn during the lessons. She gave some examples in different part of the interview to support her strong opinions. She described Hafzi's thoughts that fascinated her significantly as below:

> "In one lesson on the topic of transportation, the pupils named a few type of ways people travel in the world. One pupil mentioned helicopters, the others looked cheerful about it, ...I prolonged the discussion and focused on travel by plane. Hafzi was looking at the blackboard with empty eyes (daydreamed) for about 3 minutes. I called him to join discussion twice, but he just smiled and then went on daydreaming again. After the lesson I asked him " Hafzi, you looked like thinking of something during the lesson, what was in your mind (actually)?" He told me the wonderful journey he was engaged in imagination,..... he was on an aircraft, looking at a beautiful scenery outside. Ironically he did not know the destination. He revealed that he never experienced travel by plane. When I asked on the condition in the aircraft, he answered politely "I just imagined something like I saw in the movies. I wish one day I could go somewhere by plane". IS(M1: 4b)

The other aspect that surprised Ms Sali was that Hafzi as a preschool aged boy could anxiously express his concerns about the effects of negative habit;

> "One morning, Hafzi was the first pupil to enter the class while I was organising the activities for the day. He approached me and said " teacher!, my father is stubborn" then he pause. I replied with "Ye ke ?" or "really ?" .....(and he continued) "he keep on smoking after I told him smoking is bad for his body. His lung could be burned by the smoke, isn't it?" (Then I replied) "you are worried about your father's health, aren't you? " He then slowly said " I want him to live longer. But, my mother is a nurse. She should tell him (to quit smoking). The conversation stopped as the (school) bell rang (mean that it was time)..... for school's weekly assembly. I wonder when a child (at his age) concerned about his father's smoking habits (normally the parent who worried about the kids)" IS(M1: 6b)

On another occasion, Ms Sali recalled how Hafzi's father came to her to clarify, after Hafzi confronted him for not paying the monthly donation. This was collected on a voluntary basis and the fund was used to buy extra pencils, colour pencils and erasers

etc. Hafzi told his father that he was not supposed to use class pencils or other things, as his father did not contribute whereas other poorer people made contributions.

Ms Sali gave her opinion of Hafzi as a special boy because of his ability to learn in a different way. She ended the interview by stating:

> " Even as he was engaged in daydreaming or looked somewhere else, ... he still gave the correct answer to the given questions and sometime in return he asked me the question I never expected" IS(M1: 9b)

8.2.5.3 Vignette 5 (Hafzi and the laser pointer)

Hafzi smiled at the researcher as he entered the kitchen for 'a line for a walk" activity. He sat on the chair and explored the letters and the pictures (of many kinds of vegetables) glued on the one side of the wall. His hands and feet fidgeted swiftly and he changed his sitting position twice. After a short chat, and briefly informed about the activity, the researcher started the red spot on the floor, moved along passes by two items and slowly moved to the bottom of the wall, climbed up the wall, passed through some objects. Hafzi tracked the spot a little tensely as he moved his buttock a few time to adjust his sitting position. He then looked at the researcher's eyes and smiled as the activity ended.

The subsequent task was to name the nine objects passed by the red spot. Hafzi named seven of the objects correctly and omitted two of them.

The moving red spot was repeated for a second time using the same route. Hafzi looked anxious, fidgeted and looked away for a short while during the tracking. The following task was to run the red spot on the same route as the researcher did. Hafzi used the laser pointer to move the red spot but he lost his focus twice. He stared at the pointer the moment he finished tracking. He asked a few questions regarding the pointer and the researcher told him about the danger of any misuse. He seemed to think deeply for a while and then smiled to the researcher as he realised he was observed. Hafzi was

thanked and given four sweets as a reward for his commitment. He politely thanked the researcher in return for the sweets.

8.2.6 Malik- Ms Zuyah

8.2.6.1 Malik form unstructured observations and interviews

Malik is the second last in a family of five and is the only boy in the family. He was tall with fair complexion. His father was a factory worker and his mother was formerly a factory worker but resigned after giving birth to twins earlier in the year. They stayed two kilometres from school and his father took him to school by motorcycle. Malik had other siblings from his stepmother.

a) Unstructured observations

The observations were carried out for five days. The first day was used to build rapport and to familiarise the pupils with the presence of the researcher in the class and the procedure used. As this was the first rural school to be observed, the first day was used to master the local slang/dialect as well.

Malik was jovial and difficult to remain seated for class activity. He frequently moved and changed seats during the lessons. He sat on a chair with a pushing style where he pressed the chair with his back while he made the chair stand on two feet. On one occasion he fell abruptly to the floor, as the chair was unbalanced. Consequently he was in great shock after the fall, by the intense impact of the fall to the arm that he had previously broken. He was quiet and sat still for a short time before started to wander around again.

He had difficulties working quietly and frequently playfully did his written task while chatting or simply lay prone on the floor, sometimes even on the desk. Conversely, he frequently was more focused during the general discussions and willingly gave his ideas.

Yet he was not keen to listen to others' ideas.

In terms of learning, Malik was not serious and he said that he liked to be in class as he liked some activities, but he really didn't like pencil and paper or written tasks. During one of the unstructured observations he was struggling with his written task (copying words on the blackboard to the exercise book). When the researcher passed by his desk, he bluntly said to the researcher "cikgu!, buat sat.....letih dah" or "teacher!, do this (for me). ..... I'm already tired". He demonstrated a bored expression. The researcher replied with "you almost finish, go on!". He smiled and stood up, then walked to the door and gazed at the road. Malik also turned off from the task immediately after he felt unable to concentrate. For example, on another occasion he gave up on the work while he was personally attended by the teacher for a written task. She told him "Malik, this one is wrong. Come we do it again". Malek honestly replied "if (it's) wrong ....that's it, ...(I) don't want to do anymore".

Malik was not devoted to the class rules most of the time. For example, he walked to the canteen, bought a packet of snack, and munched it openly and dropped some chunk on someone else's desk. One girl complained about it to the teacher. Malik laughed and walked away from the girl. The teacher tiredly responded by saying "apa nak jadi dengan Malik ni" or "what will happen to this Malik". The researcher asked him about the situation and he just cheerfully said, " tak apa" or "it's OK".

Off task during the lessons was typical for Malik. He occupied his time with chatting, doing unrelated thing or sometimes just engaged in daydreaming. In one semi circle sitting on the floor activity, Malik frequently talked to a friend next to him. When the teacher realised it, she used a long ruler to tap his buttock and ordered him to change his sitting place. His reaction was to laugh and move to sit next to the teacher. As he sat close to the blackboard and away from teacher's peripheral view, he leisurely played with the board's stand.

Malik enjoyed outdoor activities. During a physical education class, he performed well in individual activities but failed to synchronise the movement/play when it come to manipulation group events. Yet he stated happily that he was good in sports and he aimed to take part in many events for the coming school's sports day. He claimed that he received a lot of prizes for preschool events in the year 2001 sport.

In terms of academic achievement, Malik was behind as he was restless and unable to concentrate. He picked up some knowledge during the lessons and verbally impressed the teacher/others with his good solution for issues discussed. However his schoolwork was poor and difficult to assess. He asserted that the tasks were not attractive as a reason for refusing to resume.

b) Informal interviews with Malik, his peers, and teacher

Malik enjoyed chatting and jovially mixed with older peers during recess time, told stories to others or played with their toys. He told the researcher that he had a lot of friends and he liked to play with boys, but not girls. His sisters once teased him for playing with a girl. He used the phrase "....people say (think) I want to get married" for the reason he avoided playing with girls. However he responded appropriately when a girl in the class asked him to convey their needs/problems to the teacher.

Malik enjoyed chatting about his belonging or his family. He boasted about his newborn twin younger sisters but never showed any interest to discuss his siblings from his step mother (his father has another baby with his second wife). He told the researcher that he loved his sisters and his parents as well but he was scared of his father as he said "I'm not afraid of my mom but my father always scold (me)'. He gave the reason for one of the punishment by saying, "I frequently disturb my sisters and yesterday I broke my new watch". He responded to the probe question by happily imitating the way his father was punishing him and said " he hit (tibai) me at my buttocks with a (small) stick emm (smiled).....he told me to take (extra) care of my

things or he won't buy (anymore)". Malik revealed he knew that his father didn't meant it as he said the same things every time he got angry.

The teacher was fatigued with Malik's overactivity and restlessness. She revealed that she used light physical punishment when it was out of control especially when it involved others in his restlessness. She was confident that the approach was appropriate as he responded faster than other ways she used. The teacher admitted that the teaching approach she used could contribute to his condition as he was not interested in the learning. However she sincerely declared that she was ignorant and unskilled in managing overactive children and she hoped for courses related to managing the children who are exceptionally different.

8.2.6.2 Malik from Ms Zuyah's Perceptions

Ms Zuyah depicted Malik as an outgoing, jovial boy with a smiling face. His typical classroom behaviour was claimed to be overly vigorous in general but languorous in terms of the obligation to tasks or academic activities. She used some classic words such as "santai", "pulun", and "timang" to explain his classroom manner. She assumed the behaviour was due to parenting style as she said:

> "....he was 'timang habis-habisan' or all out pampered at home and at the former preschool (private preschool). Here... he expected the same things (timang). When I said 'Malik, come and read this part...' he just 'santai' or settle down under the desk and laughed happily or he just run (away from me). I don't know... how pampered... I just don't know. He did his work half heartedly.... (but) when he talked ... impressively clever (in many things)....ehemmmm...when it comes to written work he doesn't want. At the beginning he excitedly started the work but less than ten minutes.... he gave up and started to doodled the pages aimlessly...that's him..." IZ(M1: 1)

To emphasise the situation related to Malik's 'naughtiness' Zuyah used the word 'teruk' or really dreadful for his outspoken habits as well as his overactivity. Malik was portrayed as simply saying whatever comes across his mind and never thinks of the consequences. Related to his overactive and imprecise manners, Zuyah revealed how

he broke his hand once, frequently broke his own new stuff (brought to school to show his friends) and lost his belongings almost every day. This caused his mother to request advice from the teacher.

Interestingly the teacher claimed that his parents gave her empowerment to use whatever strategy to discipline him as well as a corporal punishment. In revealing that Ms Zuyah said:

> " His mother and his grandfather asked me to do something because they (parents) were really puzzled about a good way to make him sensible and considerate. His mother said 'we punished him at home when he was naughty but with no effect, do whatever you think is good for him' . ... His father gave the same mandate as he occasionally came for a meeting..... he was one of the committee members for the Parents-teachers Association. He told me to punish him if he did anything wrong" IZ(M1:7)

However Ms Zuyah revealed that she became conscious after punishing him a few times with no positive impact as he was naturally smiling and jokingly told his friends about the 'reward' (penalty) he just got. His mother told the teacher that he purposely interrupts his younger sisters at home and he takes things for granted which always causes him trouble. According to Ms Zuyah, she was quite confused as the mother in interaction with Malik (observed when she fetched him in school) gave in to Malik's wishes all the time. It was clearly seen how much the mother loved him and pampered him.

Ms Zuyah assumed the upbringing as a major factor contributing to his attitude and behaviour towards tasks as Malik was brought up by his grandparents (from his mother's side) who stay in another village. He came back to stay with his parents in the beginning of the year and spent his school holidays with the grandparents.

In terms of managing his behaviour, Ms Zuyah perceived his condition as normal but difficult to tackle as she said:

> "...he is not a problematic boy, ...he just cannot concentrate in learning, his routine was such ...creeping under the desks, lied down on the desk during story

> telling or group activity (while other pupils were sitting on the floor in a semicircle) ... or else he just hung around in the class. Amusingly, every time I asked for his work, he will say "I'm finished" and dropped his book on my table ...then quickly go away (from me) because he has foreseen my comments. .....I think he is a clever boy because ....when he asked questions, he produced a quality question that other preschools seldom enquired. ... higher order question....The only thing is he became bored (*cemus*) easily. Yes..... I don't really know what to do ...to make him perform his task. ....(Anyway) his behaviour is tolerable by his peers .....only to the disadvantage (lost) of his own (learning advantages) ...not a big problem I think". IZ(M1: 12)

Ms Zuyah perceived the problem as temporary and it would be outgrown as he become older. She based her assumption on her past experiences where the pupils with such behaviours successfully finished their studies at least at secondary level.

8.2.6.3 Vignette 6 (Malik and the laser pointer)

Malik promised to do the activity (a line for a walk) after the mealtime. He was curious to know the type of activity offered by the researcher. Other pupils were still in the canteen taking their meal. He jovially used a thick accent, asked for a short time delay in order to get his snack before the activity. He chuckled, and ran to the canteen and came back within minutes.

After a brief explanation on the activity, Malik nodded his head to signify that he understood the task. As the researcher pointed the red spot on the floor, he tracked the red spot accordingly for a short time and looked at the researcher's hand on and off. He finished the task with a big sigh. The moment the red spot disappeared; he looked at the researcher's eyes and asked, " Is it finished?" The researcher replied "yes, but we have a little more to do if you are willing to continue, ...just name the things that the red spot passed by ". He seemed content with the answer and smiled. In fact, he smiled most of the time. He leisurely answered by saying "yang tu kut" or "probably that one" while he pointed to one object (big bowl on the floor) and followed by " after that.....it passed that chair..... then.....(I) don't know (entah)! ..... forgot". The researcher encouraged him to name any object passed by the red spot. Instead of

complying with the task he simply took his snack out and started to chew it and handed the packet to offer some to the researcher, then cordially said that he couldn't remember. However he then, willingly named four items hung on the wall. The red spot did not pass one of them.

8.2.7 Kefli - Ms Kasma

8.2.7.1 Kefli from unstructured observations and interviews

Kefli is the first and only boy in a family of two. His father was a businessman and his mother was a teacher. Unlike other ADHD children studied, he was born into a wealthy family and stayed in a lavishly big house equipped with a swimming pool. His ambition was to be a doctor. Kefli was a magnificent boy with a fair complexion and charming eyes. He was bilingual, speaking Malay and English fluently.

a) Unstructured observations

The observations were carried out over five days. There were three days gap between the first day and the following day of observations due to a public holiday and the weekends. The first day was used to build rapport with the pupils. However, as there was a gap for three days, the situations in the first half of the second day of the observations was not as natural as some of the pupils were curiously looking at the researcher. The data collection was started after the second half of the day when the pupils seemed to be more settled with the presence of the researcher in the class.

Kefli was very polite when he interacted with adults. He used appropriate language and manner. However the condition was different during his interaction with his peers. He had temper outbursts easily and shouted if anything came out different from what he wanted. For example, one day he asked the researcher's permission to play with the tape recorder. He was allowed to play at the corner three metres away as the researcher

and his teacher had an interview session. He played alone for a few minutes before a peer came in and joined him to record their chatting. As the teacher had foreseen the possibility of a quarrel, she suggested the researcher observe the way Kefli tackled his peer (paused the interview session). The peer said something different (in reply to his conversation during the play) from what he expected, and he simply shouted and accused him with negative words. However he seemed to mellow down when the teacher called his name.

Kefli was very careful with his belongings and was very possessive. For example no one was allowed to lay a hand on his belonging or to sit (even put things) on his seat. Every member of the class seemed familiar with his rules. In one free play occasion, the researcher sat on his seat, and one girl came to tell the researcher about Kefli's directive. The researcher went to him and politely asked his permission to use his seat. He declared and reminded others, by stated "only teacher (researcher) can used my seat".

In terms of classroom activities, Kefli enjoyed something more practical. He eagerly explored the way new things function such as operating the radio, video player and so on. On two occasions he managed to find the problems and put the right connection on for the class video after the assistant teacher failed to do so.

He appeared to be dominating others during group activities and frequently monopolised the toys and behaved as a leader for the group. The group members were not keen to take his leadership because he normally became angry at little disagreement or provocation by his peers.

Kefli was talkative and restless most of the time. He became excited easily and talked incessantly about his effort on completion of a task and insisted the teacher looked at it. He moved around the class during the lessons most of the time. Amazingly given the more times when he was out of seat, he learnt a comparable amount of the teaching

contents compared to his peers. He managed to pick up the teacher's instructions while he was focusing on something else. His involvement in academic activities seemed less affected by his hyperactivity. For example, Vignette 7a describes the scenario in one of the English lessons, showing part of Kefli's features.

i) Vignette 7a

The pupils were sitting on the floor in rows shaped in a semi-circle. Kefli sat in the middle of the row. He fidgeted frequently, and crossed and uncrossed his legs as he talked to a boy next to him. When the boy ignored him, he leaned his body to another boy behind him and gradually lied down as the boy leisurely shifted back (to avoid him). The teacher called his name and Kefli spontaneously sat properly for a minute then stood up, walked to the reading corner and picked up one of the books. He was looking at the book, facing the bookshelves, when the teacher gave instructions to the pupils in the group to act as she said " point to your nose", "put up your left hand", point to the door" and a few more similar instructions. Kefli did exactly as the others; pointing to the his nose and put his left hand up and did other actions as requested and yet his eyes were gazing on the book. The teacher then shifted the activity to a more dynamic action. The teacher picked one name from a box at random and the chosen name will pick the card from another box, then hunt around the class for the thing stated in the card (word or picture). When the particular stuff was found, they showed it to the teacher. If it was correctly picked, then declared the word twice, followed by others in unison. Kefli spontaneously joined the group and he frequently put up his hand insisted for his turn (though his name wasn't pick up by chance). When the particular pupil found the thing and brought it to the teacher, he loudly named the thing. If the teacher told the particular pupil to find again as it was wrongly picked, Kefly laughed and gave a negative/belittling comment such as " alaaa.... .yang senang pun tak tau ke? or "easy like that also you do not know!". He immediately quiet down when the teacher looked intently at him. The task was ended with the pupils jotting in the book all the words picked up by their peers during the activity. Kefli was among the first to

finish the task.

b) Informal Interviews with Kefli, peers, his teacher, his mother and the head teacher

Talking about ambitions in a group of three after class, Kefli revealed that he wanted to be a doctor for monetary reason. He elegantly said, "to get a lot of money.... Doctors have a lot of money..." and he seemed to know the basic nature of the job. He said that he gained the knowledge from his father's friend. In one of the 'chatting play' using the recorder player, Kefli seemed to heighten his performance in academic lessons by telling his chatting partner that he was always the first in his class. He boasted about his belongings, in particular his new house with a swimming pool, and luxurious life style such as the way he spent his holidays. His chatting partner in return revealed that he never uses a swimming pool and he had never stayed in a hotel. He then offered the peer to visit him for a swim in his pool.

Kefli apparently is a dextrous boy. His mother and his teacher revealed the same description on his skill with electronic things and portrayed him as unsettled if he cannot explore new electronic-like things. He dismantled some of his mother's new things without her knowledge. Another comment was on his restlessness. His mother conveyed her worry about his anomalous behaviours and she admitted that Kefli's uncle behaved the same way during his childhood.

A few incidents disclosed by the teacher suggested that his parents sometimes lost their composure when he misbehave in public and consequently the teacher felt that he was maltreated. She was particularly concerned about any noticeable differences in Kefli, physically or emotionally and she explored the situations by probing the boy. However Kefli avoided discussions about his unpleasant times while chatting with the researcher.

The teacher admitted that she was not skilled in behaviour management as occasionally she felt discouraged when Kefli's mother mentioned about teaching strategies and

teaching aids in the private preschool, comparing with current practices in the class. The mother mentioned it as she felt offended when she realised that her son was rejected by most of the boys during the class activities and she thought the teacher should do more to tackle the problem.

The peers who seemed to avoid Kefli were informally interviewed about why they do not want other peers to join their group and mentioned Kefli as an example. They mentioned his difficult behaviours as the reason they avoided him and one boy particularly said that 'Kefli is bad'.

In the second day of the fieldwork in SR2, the researcher met the head teacher. During the half an hour chatting the head teacher revealed that he started to recognise Kefli after the boy suddenly entered (intruding) his room in the previous school term. He was looking for his mother.

The head teacher revealed two other incidents related to Kefli's restlessness and he ended the discussion with

> "I just knew briefly about his condition ...he was extremely fearless of everything.....and I told (reminded) the preschool teacher to take extra care". FN(SR2:7)

Kefli seemed a good auditory learner. His teacher concurred with the strategies in dealing with Kefli's behaviours by considering his strength in learning. She realised that he obeyed her orders most of the time but this was unsustainable due to his impulsiveness. She admitted that by adjusting the situations to his present moods and needs, he learnt along with his peers. The teacher was not worried about his academic achievements as he was a bright boy. She repeatedly conveyed her concern that Kefli as well as the other pupils with learning difficulties might face situations which are not conducive with their needs in the coming years.

8.2.7.2 Kefli from Ms Kasma's Perceptions

Ms Kasma described Kefli as a bright and brainy boy who was always alert in new lessons or skills being taught. He finished his work on time and keenly looked for extra work when he finished earlier than others. However, he carried out his work in a rather odd way as he changed his seat or his position often. Ms Kasma perceived him as having behaviour difficulties as he frequently moved around the class and was overly active during outdoor activities. To explain his nature she stated:

> " Kefli has some various personality in general. He worked intensely to compete with others and .....perfectionist (in quality and quantity), ...he wants (to be) superior than others in everything.... I observed him... he just cannot tolerate failure or critics ...(there were) advantages as he was fluent in both languages (so) he read most of the English books we have here... occasionally he described the contents of the book to those who curiously watched him reading. .....I don't know, ...sort of showing off and sometimes he behaved like a leader to his peers but not many can follow his style...."IK(M1: 2)

In explaining Kefli's difficult behaviours Ms Kasma revealed some previous incidents which happened inside and outside the school. One of the most precarious events was when he took his mother's car key without her knowledge. He started the engine and as the car was parked in an engaged gear, the car jerkily moved forward and knocked the barricade in front. The incident damaged the front side of the car. He was not injured but shaken by the experience.

On another occasion, during the school weekly assembly, he was alone quietly hanging around, far away from the assemblage. As the head teacher was giving his speech on the stage, he spotted Kefli and he signalled the preschool teacher to attend to him. From that moment, the preschool teacher was standing at the back of the row of her pupils (whereas the other teachers were sitting in front of their pupils) during the weekly assembly. Kefli's mother as a member of the school staff was very embarrassed with the incident and she locked him in the car (with the windscreen half opened) for an hour on the particular day after the assembly as a punishment.

There were other incidents related to his behaviour revealed during the interview as the

interview was continued on another day. In connecting all the incidents to his behaviour, Ms Kasma stated:

> "I think, this Kefli is in the category (your study)..... He matched the behaviours listed in your checklist, ... Am I right? But I'm quite confused when it came to his learning..... He did well in most subjects. I told you many things about him (but)....I'm not telling you (I don't mean) that I reject him. .....I know very little (about Exceptional children behaviours)..... day in and day out,..... I learnt how to deal with his needs by chance (translated from *sehari-ke sehari saya belajar apa yang boleh apa yang tak boleh dengan dia ni*). But somehow, the interruption from outside made the situations, sometimes more complicated." IK(M1: 5)

Ms Kasma clarified that she managed to put the situations under control. However the most complicated situation she ever faced was when the parents of the pupils (who were the staff in the school) took the side of their children. As Kefli was occasionally in dispute with others who happened to be the children of the school's staff, the other parents demanded that Kefli should be put in a different group. She joyfully revealed the strategy she used to calm the parents as it successfully closed down the issue. She said;

> " I told the parents, ...It was a matter amongst children ...(typical) they fought and they forget and play together then fight again later before they have another fun together. Let me do my part as their teacher and please trust me. ....(however) Kefli's mother did feel humiliated by the complaints and she frequently dropped by to this class for a short while whenever she was free....just to glimpse at Kefli's behaviours.....sort of a spot check (she came in at random)" (translated *from "mak dia rasa tak sedap bila kena komplain dan mai jenguk sat bila ada masa....hanya nak tengok perangai kefli...macam spot check laa...".*) IK(M1: 11)

According to Ms Kasma, she did not feel the pressure of his condition but she perceived that his parents were affected since he sometimes told the teacher when his father scolded him for his unpleasant behaviours such as in a restaurant or regarding his messy homework. The teacher perceived that it was not really difficult to calm him down when he became aggressive or to make him settle down when he sobbed. Ms Kasma felt the challenge in teaching him as well as the self-satisfaction after establishing the effective approach for his unpredictable condition. Ms Kasma confessed that she managed to comprehend his requirements where he learnt in a special way and adapting a new rule or experience at the same time, yet she was concerned about his future

learning as the nature of primary school learning is different and the teachers are not prepared for such children.

8.2.7.3 Vignette 7b (Kefli and the laser pointer)

Kefli came in the kitchen and curiously asked about the activity to be done. He was briefly explained about the nature of the activity and the details of the task he was suppose to carry out. He asked the researcher the reason for choosing only him and the another peer for the activity but not all the pupils. He was satisfied when answered that the researcher wanted to see the difference between two pupils; him and the other peer in doing the task while others have to wait for their turn, if the researcher has enough time to do so.

The moment he saw the laser pointer, Kefli spontaneously said that he knew the thing and he even used it at home. He knew the danger of the laser ray as his father told him about that and his father banned him from touching it.

The activity went on as scheduled and Kefli tracked the red point accordingly but he looked at the researcher a few times in between. He named the objects passed by the red spot correctly. However when given the pointer for the following task, he excitedly smiled and asked if he could use it outside the kitchen. He agreed to do the task where he should track the same route as the researcher did. He pointed the spot to the right starting point but later he playfully tracked away from the route. He told the researcher that the pointer got the light from the battery inside the cylindrical body and offered to show it by dismantling it. He smiled when the researcher told him that he had a broad knowledge. He said "let me change the battery if needed " after he was not allowed to dismantle the pointer. The task took a longer time as he talked all the way. When the activity was over, he pleaded to use the pointer outside but was pleasantly refused by the researcher. He then told the researcher that he knew the shop where to buy the laser pointer in the town but he dare not buy it as his parents did not allow it. He politely

smiled and said, "Thank you teacher" when the researcher thanked him and gave him sweets.

8.2.8 Bidin - Ms Tasya

8.2.8.1 Bidin from unstructured observations and interviews

Bidin is the youngest in the family of four with two boys and two girls. His mother was a rubber taper and his father worked in a palm oil estate. In terms of interaction, Bidin was a quiet boy but moved around actively. He had cheerful eyes and was fairly good looking as he was neatly dressed most of the time. His father took him to school by motorcycle. His ambition was to be a tractor driver.

a) Unstructured observations

The observations were carried out for five days. The first day was used to set the observation procedure as the lessons were carried out in a temporary place (school canteen) and group activities were done in two different places. The researcher had to move to the group where Bidin and his comparison were doing their activity. Most of the observations were during the classroom activities and a few were done during the outdoors activities.

Bidin arrived in school regularly on time everyday and his attendance record was good. In the morning before the bell rang for first lessons he often observed others playing but never joined them in the game. During the free play activity he seemed comfortable playing on his own or simply played with his small toys or engaged in daydreaming.

As the temporary class was set-up in the canteen, he frequently changed his seat to view others (preschool peers and elder pupils) or to view the road.

In terms of learning, Bidin was tardy in following teacher's instructions as his mind was

frequently absent and the teacher had to repeat the instructions for him and was fidgety during the lessons. For example, in one lesson, the teacher asked him to move to group A, and he spontaneously rushed to group B and the teacher called him twice to make him listen and understand the instruction. He laughed along with others when the teacher asked "Bidin, did you put your ears in your pocket again?" His reaction to the teacher's comment on his situations was just to smile. It seemed that he was less sensitive to critics as he typically smiled when someone criticised/teased him.

In terms of academic achievement, Bidin was behind compared to his peers, as he did not recognise most of the symbols of letters or numbers. He copied the letters or numbers correctly but he made less effort to copy words, or on tasks that seemed to take a longer time to finish. With the adults' encouragement he managed to finish some of his copying tasks but the work was not well organised. Bidin was obviously not interested with the pre-number lessons or tasks. He walked around and peeped at peers' work until he received a personal attention from the teacher/assistant teacher. He sneaked to another group (Malay language group) a few times. In one of the lessons he disappeared from the group and the teacher found him playing alone at the nearby preschool playground.

Bidin physically reacted spontaneously to impulses most of the time. For example, he jumped on the table as he saw a couple of peers playing a game at the sheltered reading corner of the (in progress of renovation) classroom. Another boy followed his actions and five of them were standing on a row of desks. Bidin was the last to jump down when they knew that the teacher was heading to the place. On another occasion, he forced himself to the middle of the peers when he realised two girls were recording their singing into the tape recorder during the recess time.

Bidin frequently lost his workbook as he simply put the book in other's compartment (rak). The teacher reminded him to carefully keep his belongings every time the lesson is over. His reaction was either to smile or nod his head and never reply verbally. The

teacher used a note to remind him/his parents about anything that needed to be done at home or to take along for the next lesson. Nevertheless, he was considerate in sharing the class pencils/colour pencils or toys and was never aggressive.

b) Informal interviews with Bidin, his peers and teacher

During a group chatting with the researcher, Bidin was quiet but occasionally he whispered to the peer who was close to him. Sometimes he butted in when others talked about general things that he had interest in. However, Bidin seemed more confident to respond verbally when asked to describe something he was familiar with. He appeared to know many things related to oil palm as he told the researcher how to differentiate between the young fruits and the ones due for harvest. He even told roughly about how the oil palm tree looked and the tractors used to carry the fruits to the harvest station. Bidin casually mentioned cooking oil as the product of the palm oil in response to the question on how people used the palm oil in daily life.

In terms of interpersonal skills, Bidin was sensitive to non-verbal cues. For example, he immediately walked back to his seat after he realised that the teacher was staring at him. When the researcher asked him why he rushed back to his seat, he said "the teacher (is) angry" and pretended to continue his work. On another occasion he walked away when one of his peers looked fiercely at him as he accidentally broke their work, built with building blocks.

It was observable that his peers were not keen to choose Bidin as a partner or a group member in free play. On one occasion the researcher chatted with him while he stood alone looking at his peers doing the skipping activity. One of the peers then joined in the chatting. The boy told the researcher that Bidin was not willing to play with them (when in general asked why Bidin did not join the skipping) . However, Bidin had his reason for not joining them as he said "don't want ...difficult". He told the researcher, he liked to play at the playground (alone) because it was easier. Bidin was frequently

seen playing with one of the girls after 11.30 a.m. He acknowledged that the girl often visited his house after school and played with his sister while waiting for her parents to fetch her.

The teacher, in revealing the approach she used in teaching Bidin, told the researcher that she was not sure with the way she used but she based it on trial and error. From the beginning of the year, she had tried many ways that could be applied for all pupils as she cannot focus on Bidin alone. She gave examples of the approaches she used such as the star token, the rewards and the verbal reinforcement to mention a few. She apologetically admitted that she realised how Bidin reacted to written work as he was not keen on doing it. She had the reasons for using the workbooks in daily activities. It was meant to induce readiness and to familiarise the pupils with the nature of formal teaching activity in year one which was in about three months time (January 2002).

8.2.8.2 Bidin from Ms Tasya perception

Bidin was portrayed as a pleasant looking boy with neat cloths and quiet in terms of verbal conversation but physically full of zip and impulsiveness. He was forgetful in recalling past events or things he learnt. Ms Tasya used the terms 'ghalit' or daydreamer and lack of personal urgency as he takes his time to respond to all verbal stimuli from others. He was behaving like a daydreamer as he kept on with something he was doing or in a situation he was engaged in continuously where Ms Tasya named it as " neither here nor there" (translated from dialect phrase nak kata perati kad kita bukan, buat kerja dia pun bukan). To stress her perception of Bidin's situation she said:

> "He looked like a calm, clever boy, but in reality he was far behind others... not really clever... always dropped from activities... 'ghalit' (or day-dreamed). But he can use language to convey ...especially about things (within his interest) But he was always forgetful... never manage to recall anything he learnt before... moreover (lagi)... he has difficulties in listening (to my instructions)... if you stay (observe) longer... you can see (how he react to instructions) IT(M1: 5)

Ms Tasya described his situation as 'a father's son' (anak ayah) meaning that he spent

most of his time with the father after school time. He went along with his father on the farm, shopping at the small shop in the village or to the mosque. The teacher said:

> "it was rare to see the father on his motorcycle without him. His father told me about his same conditions at home.....to avoid his habitual day-dreaming his father took him to the field/farm after school ..... he knew a lot about the nature of his father's work " IT(M1: 6)

Ms Tasya claimed that she got full co-operation from Bidin's family. His father realised his condition as he frequently discussed the problem with the teacher and at home, his sister guides him in learning the alphabet and polishing his pre-writing skills particularly in mechanical and cursive writing.

In order to get him to remember the things he learnt, the teacher said that she associated the subjects to concrete objects or experiences Bidin had, such as to associate the letter 'o' with a doughnut and 'k' was associated to ' a small branch from a tree'. At the beginning he named the letter 'o' as doughnut and confused 'k' and 'r' for a small branch then he himself associated the letter 'r' to the water pipe's holder.

Ms Tasya considered Bidin as immature with lack of readiness for formal learning. She was confident Bidin will outgrow the problem as he comes to primary level. She assumed that as a preschool Bidin was delayed in maturity but it was temporary.

8.2.8.3 Vignette 8 – Bidin and the laser pointer (Note: The activity 'a line for a walk' was done in a pondok, a small house meant for pretend play as the kitchen was under renovation as described in chapter 6)

Bidin curiously sat on a bench in the 'pondok' while waited for the activity. He briefly talked about the activity and requested to ignore his peers if they happen to peep in. He just smiled when the researcher said "can we start the game?" then he looked intently at the pointer in the researcher's hand. He tracked the red point until the end with few distractions as the researcher made a rectangle route on the floor. He was then given the pointer to track the same route. Bidin smiled and happily took the pointer and ran the red point himself. The light came off before he managed to track the route as the

battery was running out. After replacing a new battery to the pointer, the researcher repeated the activity in order to refresh the route for him. Bidin started to run the red point at a different point and out of the route in which he supposed to follow. After one minute he saw a small ant moving on the floor. He tracked the ant until he was told to stop. He verbally commented about the pointer's conditions by saying "hot" before he returned it to the researcher. The activity was repeated after the researcher told him the task he was supposed to do in detail. He then used the pointer to make the oval route on the floor. He was thanked and given sweets before he walked off the pondok. He happily told a peer next to him about the laser pointer he used.

8.2.9 Narmi - Ms Alin

8.2.9.1 Narmi from unstructured observations and informal interviews

Narmi is an only child, he was adopted when he was a new-born. His father was a gardener and his mother was a factory engineer. They stayed 10 kilometres from school. Narmi was not very verbal in nature. Physically Narmi was tall for his age. His ambition was to be a gardener.

a) Unstructured observations

The observations were carried out for six days. The first day was used to adjust the fieldwork procedures as the observations were meant to gain data for two pupils with ADHD in the same class.

Narmi was restless most of the time. The teacher put him under the assistant teacher's care to tackle his condition. He hung around leisurely in the class until the assistant teacher grabbed him and put him to his seat. He got out of his seat again the moment the assistant teacher turned her back. For example, during one group activity, he hung around for a whole period as the assistant teacher was cooking in the preschool kitchen.

He then walked to the playground outside the classroom. Consequently he sustained minor injuries while sneaking out to the playground. He cried tremendously upon seeing blood on his knee. He stayed in his seat for a few minutes while the assistant teacher cleaned and put a plaster on the cut. He spent some times playing with the tortoise in the aquarium at the back of the class before he moved to the reading corner and lay prone on the desk. He was there alone playing with his small toys until the assistant teacher took him to the group. He brought along his small toys to school every day and played with them during the lessons.

In terms of schoolwork, Narmi missed most of the tasks as he was on the move almost all the time. He never did written work given on his own, and frequently went to the assistant teacher for aid. He asked the assistant to start the task and he continued the work for a few minutes if the assistant stayed by his side.

During the mealtime, Narmi was choosy and seldom ate the preschool meal. He ate the meal only once during the six days observations. He gave many reasons for not eating the meal such as he was full and on a different day he commented that the food was not tasty enough before he tried it. However he purposely took his portion and gave it to a friend. Interestingly he gave the food to the same boy almost every day. He even occasionally shared his snack with the boy. There was no intimacy observed between them at other times of the day (before or after mealtime).

In general Narmi was off task most of the time and he needed an adult guide in order to comply with the task. In terms of social interaction, Narmi was on his own playing with his toys or hanging around aimlessly and occasionally became aggressive to peers when his interest was interrupted.

b) Informal Interviews with Narmi, his peers, teacher, assistant teacher and his father

Other than the peers and the teacher, the related information was also gained from the assistant teacher and Narmi's father. As a member of the school staff, his father frequently dropped by in the class during lessons as well as after lessons and joined the chatting sessions between the teacher, the researcher and the assistant teacher.

Narmi told the researcher (and a few friends) about his mother's big car as we talked about national cars; Proton and Perodua. He described the difference between his mother's car and his father's car. He smiled when one of the peers described his family as a rich family. Narmi also claimed that his mother was richer than his father. He revealed that he liked to be at home and offered the researcher to drop by, to see his toys/games which he kept in a special place. He elegantly stated 'at home I play in an air-conditioned room .....not hot (like the atmosphere in the class)'. In terms of schooling preference, Narmi stated that he was good as he finished all his work. He produced his book when asked to show the work he had done. He later claimed that the assistant teacher said he was a good boy. He named the assistant teacher as the person he liked most in the class.

Narmi was not favoured by many of the peers in the class. For example, (at 11.25 a.m. on one of the observation days) he hit a boy next to him on the head as he claimed the boy disturbed his toy. After class the boy and his friend chatted while they played with the toys brought by the researcher for the fieldwork. During the chatting, the boy claimed that he disliked Narmi very much and he used the term "naughty" to stress Narmi's behaviour. He told the researcher that Narmi was frequently rough with him.

In terms of teaching strategies, the teacher told the researcher that she was not focusing on Narmi's condition because he was not going to year one in year 2002 as he was only five years old. She gave the responsibility to the assistant teacher to deal with Narmi's needs. The teacher admitted that she had not really tried to adjust the class activity

since Narmi was going to repeat the preschool classroom routine in the coming year. However she realised that the other five-year-old boy was behaving totally different from Narmi in terms of learning behaviours and interaction skills. She anxiously told the researcher that she hoped Narmi becomes more mature when he comes for the next school term in January 2002.

The assistant teacher revealed how she perceived that Narmi was not ready for formal learning as he had more interest in toys and video games as well as not being keen in joining class activities. She conveyed her routine in picking up Narmi while he hung around or when he was occasionally involved in arguments with others. She gave some examples of the situations related to Narmi's behaviour. The assistant teacher was knowledgeable about Narmi because she dealt more with his difficult behaviour than the teacher. According to her, she used story telling to make Narmi stay put and in return Narmi told her about many things especially his life after school, his house as well as his parents' properties. On many occasions, Narmi boasted about his toys. When his peers were around, some challenged Narmi about the truth of his story. Subsequently he brought the toys to school to prove it.

Narmi's father comes and see him on and off during the school time every day. On a few occasions the father was chatting to the researcher regarding Narmi's conditions when the class was over. He revealed some important information on the early period of Narmi's development. According to him, the boy was difficult to manage during his first year because he sobbed a lot especially at night. At one point the father was thinking of returning him to the natural parents but his wife was keen to keep Narmi whatever happened as for medical reasons she was unable to mother her own child. The situation improved gradually when he was cared for by his baby sitter. The father conveyed that as the only child, Narmi had hardly any friends or peers at home to play with because they stayed in an area, which was populated by older people with grown up children. Narmi spent most of his time with toys or games and focused on the game dearly. He cried almost every morning and the parents had to carry him down to dress

and for breakfast. The father admitted that he was ignorant about parenting and wondered if Narmi's restlessness and lack of social skill could signify any problems in the future.

8.2.9.2 Narmi from Ms Alin perception.

According to Ms Alin, Narmi was immature and playful most of the time. He seldom adheres to any task given during the lessons as he moves around the class all the time. Ms Alin was not sure whether overactivity behaviours displayed by Narmi was beyond age appropriate (developmental path) because Narmi was one year younger than the majority of preschool age children. On the other hand Ms Alin claimed that parenting style to a certain extent did contribute to the situation because Narmi was really pampered by his parents and the effort to discipline him in class was very challenging. He responded better to the one-to-one situation during pencil and paper activity but never finished the work he started. In explaining the difficulties she experienced in dealing with Narmi, the teacher candidly admitted that her assistant knew more about the boy's classroom behaviours because in daily routines, the assistant teacher attended to the pupils who need personal attention in school work as well as those engaged in behaviour problems. She recommended an interview with assistant teacher and the boy's father in order to gain more reliable information and voluntarily offer introducing the researcher to Narmi's father. To end the interview Ms Alin said:

> "Narmi is not a problematic boy compared to the boys from the previous (cohort). ....(Narmi was) not ready (for learning) I think!. ....to let him learn to behave (socialize) in this class (as a community) and pick up with communication (skills) is more important than preparing for 3R's basic knowledge (as some parents wanted their child to be able to read or at least to recognise alphabetical symbols at the end of preschool year). IA(M1: 3)

8.2.9.3 Vignette 9 (Narmi and the laser pointer)

The assistant teacher took Narmi to the kitchen for 'a line for a walk activity'. He curiously asked the researcher about the game and the reward mentioned by the assistant teacher. The researcher friendly briefed him about the 'game' and the task he was suppose to do but invited him to find out the reward after he finishes the game.

Narmi sat on the chair and played with his toy (he got this from a snack pack he had just bought). The activity was delayed a few times as he was fascinated by the toy. The assistant teacher reminded him that he had to play the game if he wanted to find out the reward. He handed the toy to the assistant teacher and was ready for the activity. He tracked the red point half focused as his mind was on the pointer itself. After completing the tracking he was asked to name the objects passed by the red spot. He refused to comply and he said 'the game is not delightful' (literally translated from '*main ni tak seronok*'). The researcher offered him to use the pointer himself and he agreed to comply with the new task.

The researcher handed the pointer to him and instructed him to move the red spot on the same route as the researcher did. He pointed the red spot to every angel of the room and made a small circle at the ceiling followed by a bigger and bigger circle. He stopped the pointer immediately when asked to do so. The researcher repeated the first task to name the objects passed by the red spot. He bluntly declared he wanted to play with his toy. He smiled when given sweets and he offered some of the sweets to the assistant teacher.

8.2.10 Rozi- Ms Alin

8.2.10.1 Rozi from unstructured observations and informal interviews

Rozi is the second last in a family of three girls. Her father was a fisherman and her mother was a factory worker. They stayed two kilometres from school. In terms of health Rozi had no record of any illness but physically she was small for her age. She has speech problems as she pronounced words in an odd sound. Her ambition was to be a petty trader selling fruits.

a) Unstructured observations

As mentioned in 8.2.9 above, observations were carried out over six days where part of each day was used to observe the another pupil with ADHD in the same class (Narmi).

Rozi was observed for six days. Typically she was reserved and quiet but when she started talking she tends to be very talkative dominating the situation. When her companions sometimes disagreed with her ideas she felt irritated and moody. They frequently ended up with an argument.

The peer who seemed to play and communicate with Rozi most was Ifa. Other girls were not keen to play with her. (Ifa was the pupil with ADHD-like behaviours with higher score than Rozi in the ADHDC rating; but the girl was frequently absent, and Rozi was chosen as the alternative case). Interestingly, after a few minutes playing together they ended up quarrelling and Ifa seemed to hold the situation until she won the argument. On a few occasions the argument turned to hostility. The teacher separated them in group activities but at any opportunity they just teamed up chatting before having a quarrel about a small matter. As they quarrelled every time they mixed together, the assistant teacher labelled them as 'a cat and a dog'.

In terms of academic achievement, Rozi was behind her peers. She complied with the task completely if her mood was fine. She frequently wrote the letters or numbers in the opposite arrangement such as 'ikan' was wrote as 'naki'. She wrote correctly when the teacher or assistant teacher reminded her once or twice. On the first day of observations, Rozi copied ten words from the blackboard in this style. She was upset when the teacher corrected her work and asked her to redo the task.

Rozi was very possessive and took control of games or materials used for group activities. For example in a collage activity (in a drawing lesson), Rozi and her group failed to complete the given task, as she tried to dominate the group and others were

against her. In addition, Rozi was likely to keep the preschool toys or other materials. On the second day of the observation, she put a few blocks in her bag without the teacher's knowledge. Another girl told the assistant teacher about the blocks in Rozi's bag. She hesitantly let the assistant teacher check her bag. On other occasions, the teacher distributed eight straws to each pupil for an activity. Rozi quietly picked one straw from the peer next to her. The girl without any suspicion asked for another straw as she has only seven and she got one from the teacher. A moment later, the girl told the teacher that one of her straws went missing. The teacher asked Rozi to return the straw to the girl as she had nine straws. She stubbornly and stiffly kept quite and gripped the stuff and her mood swung for more than one hour.

Rozi used vocalization to hurt her opponents during quarrels and she frequently used the term 'a thief' to them. On one occasion she complained to the teacher that Ifa stole her pocket money. The teacher then found out that she kept Ifa's pocket money for two days as they pretended play where Rozi as a trader and Ifa as a buyer. Ifa claimed the money by force when Rozi refused to return it as agreed before.

As mentioned earlier, Rozi was very moody and once her mood changed, it lasted for a long period. For example she stayed put with a long face for 30 minutes staring at her desk just because she was upset when the teacher instructed her to stop playing. She was ignored for the moody period. She picked up a pencil and drew something on a piece of paper. The teacher then called her to join the activity. Shockingly she just shouted out her refusal. In such mood she behaved aggressively to any call or interruption.

b) Informal Interviews with Rozi, her peers, teacher and assistant teacher

Rozi was fairly reserved in sharing her background with others. The researcher had limited opportunity to chat with Rozi individually in a good atmosphere. This was because her emotional state was frequently unstable (moody) during the recess time due

to an incident before it and she immediately left the school at 11.30 a.m. The information on her was gained through informal interviews carried out with her peers, her teacher, and the assistant teacher. They were indirectly asked related questions in order to illuminate the situation observed for Rozi.

The peers seemed to keep away from Rozi during class activities. One girl moved to the reading corner when Rozi peeped in and commented on her work. When the researcher asked the girl for the reason she worked at the corner, she blamed Rozi for disturbing her and she told the researcher about Rozi's behaviours she disliked. On another occasion during mealtime, Rozi used a square white towel to underlay her drink. She then took her peers' drinks (who seated next to her), and placed these on the towel as well. As she almost lost the equilibrium before she settled the glasses, some of the drink splashed out and wet the place. The peers were angry and argued with Rozi.

The teacher realised Rozi's difficult behaviours and she used an "ignore" approach to tackle the problem in most cases because she was not aware of other behaviour management strategies that suited her. She revealed that other approaches she ever tried were not a success and she also realised that punishment made the situation worst. The responsibility to calm down the difficult pupils was given to the assistant teacher, as the teacher claimed she (the assistant) was better at dealing with the situation.

The assistant teacher gave extended information about Rozi, as she knew Rozi's family. They stayed in the same village. According to the assistant teacher, Rozi spent her off-school time with her grandmother most of the time. In the afternoon she helped her grandmother at a roadside stall where she sold home-made snacks. Neighbourhood peers did not befriend Rozi because she frequently initiated a quarrel or arguments amongst them. She had a baby sister whom she seemed to dislike. According to the assistant teacher, Rozi gave no response when anybody asked her about the baby sister. The assistant teacher also revealed that Rozi was difficult to manage as her behaviours

were unpredictable and her mood frequently changed tremendously along the day. Consequently she predicted future problems if Rozi's behaviour did not improve soon.

8.2.10.2 Rozi from Ms Alin perception.

Ms Alin described Rozi as a unique girl. She was very moody and she will not take 'no' for answer when she wanted to do anything against adult approval. Instead of having speech difficulties (in pronouncing words properly), her vocabulary power was almost at par with the peers. Ms Alin used the term 'bantah' or stubborn to emphasise Rozi's overall classroom behaviour and the colloquial phrase 'dia selalu pilih kawan yang macam dia jugak, sebab tu selalu gaduh' or 'she tends to befriend peers of the same character (aggressive) and ended up quarrel most of the time', to describe Rozi's interpersonal interaction. As in the case of Narmi, Ms Alin assumed the upbringing was the main factors contributing to her character. Rozi was behind her peers in academic performance and the teacher suspected the slow presentation is related to the problems she has in speech and memory. Although she realised the different needs of Rozi, the teacher was not sure on the special education process in identifying pupils with special needs. She supposed that the girl may outgrow the problems in the coming years or if not, the teacher (in primary level) will detect the problems and refer her to remedial programme.

In terms of teaching strategies to tackle Rozi's problems, the teachers openly admitted that she was not aware of any special way in dealing with exceptional children as the initial training she had did not include any special education exposure and she has not attended any in-service course or training regarding special children (special needs).

8.2.10.3 Vignette 10 (Rozi and the laser pointer)

Rozi was not keen to do "a line for a walk" activity, and she never replied verbally when asked if she would like to play a special game with the researcher. However on the last day of the observation schedule, she agreed to do the activity. Her mood was

fairly good at that time. She asked the researcher a few things unrelated to the activity and chatted for a moment before the activity.

She was briefly told about the game and the researcher explained in detail the task she was supposed to do. She agreed to comply. Rozi occupied the time to track the red point with focus and she managed to complete the tracking easily. When asked to name the things passed by the red points, Rozi managed to give three of the five objects but she pronounced the names oddly. In the subsequent activity, she was asked to repeat the tracking using the pointer by the same route as the researcher did. She completed the task correctly but swiftly. She cheerfully took the sweets and put these in her bag. Ifa curiously asked her about the game but she refused to tell. When Ifa tried to approach the researcher, Rozi held her hand and chattily revealed the situation she experienced.

8.2.11 Conclusions

The above subsections described the pupils with ADHD in 10 cases studied and their teachers' related judgements on the cases. The cases formed an ADHD profiles for each selected pupil. To gain a clear picture of the ADHD features, the behaviours displayed at different times or settings were included, collected by purpose and chance from many different informants as described in every case. These data broaden the extent of the pupils' profiles. Additional data collected by the activity 'a line for a walk' illustrated in vignette for every case also expands the illustration for ADHD related behaviours in different situations. In general, all of the pupils displayed behaviour problems in the classroom situations particularly in learning and social contacts but some were able to cope by learning in a unique way.

Using interviews and observations, to prompt data on the abilities and weaknesses of these pupils, the results show that they were having functional problems in learning and/or social interactions. It is consistent with the earlier assumption that pupils with

ADHD, to a certain extent will show dysfunctional behaviours in school settings. Owing to the way they performed in the functional situations, all the 10 pupils studied were perceived by their teachers as different from typical children at their age. However none of them had received any purposive evaluation for diagnosis of the behavioural problems they posed.

8.3 PRESCHOOL TEACHERS' KNOWLEDGE AND PERCEPTIONS ON SEN, ADHD AND IE

This section discusses teachers' knowledge and perceptions on pendidikan khas di Malaysia or special education in Malaysia, SEN, ADHD and IE based on the information collected through interviews with teachers mode one part two. Eight preschool teachers were interviewed. The purpose of the semi-structured interviews was to examine the teachers' knowledge and opinions about special educational needs (SEN) in general and to find out whether or not they automatically full-heartedly accept pupils with exceptional needs in their class, in particular the pupils with Attention Deficit Hyperactivity Disorder (ADHD) chosen for the case studies. The rationale of choosing those teachers has been presented in chapter five. In addition, the information collected from these interviews is used to triangulate the real situations in the their classrooms to compare the effort and responsibility they take in providing for all the educational needs of the pupils.

Since there is a lack of research on SEN and inclusive education (IE) as well as ADHD in Malaysia, the discussion is focused on the teachers' responses in the interview mode one part two regarding SEN, ADHD and IE.

Three categories of the teachers' views are grouped as follows:

1. Their knowledge on pendidikan khas (PK) or special education in Malaysia and SEN in general
2. Their knowledge and perception of the nature of ADHD and behavioural problems.

3. Their knowledge of IE and their perception of the implementation of IE in Malaysia.

In presenting the interviews data of mode one part two, whenever appropriate the teachers' views were divided into these three groups.

8.3.1 Teachers' knowledge of SEN

8.3.1.1 Special education and SEN

The teachers were varied in their response to the questions on pendidikan khas (PK) or special education in Malaysian context and the concepts of children with special educational needs (SEN). They defined the terms in their own different way according to their perceptions. Three of them used the words "handicapped children" in their explanations, two teachers used the term "special children" and the other two teachers used a long phrase to define the meaning of PK and SEN while one teacher mentioned "special curriculum". They discussed the terms without referring to specific programmes for SEN or situations in the current Malaysian educational system. Every one of them focused on children's disabilities or incompetence as landmarks of the SEN cases.

They also described PK as education for children who need specialised teaching and resources, appropriate to their needs academically but none of them mentioned the social or emotional domain of SEN. In unfolding SEN, most of them described children with SEN as those with sensory (sight and hearing) and mental disabilities. Nonetheless, it is the official definitions of children with SEN given by the MOE Malaysia. However, there were definitions of SEN given by some of the teachers, which included children with behavioural problems, children with Down syndrome, and children who might have problems academically. Additionally, those who temporarily have learning difficulties and those underprivileged were considered as children with SEN by one teacher. All the teachers claimed that they never get direct information

regarding the ministry's special education programme and therefore they comprehended the concept of PK based on what they heard or have been told by friends or relatives who work directly or indirectly with children with SEN.

Specifically, these are parts of the definitions expressed by the teachers (translation version: the words in the brackets are the clarifying phrases given by the teachers upon probing questions):

Miss Hana: "As far as I know, PK is actually an education (programme) provided for special children such as blind or deaf ..... or the handicapped.....those who are different from (children in) normal school. They are normally segregated (from normal peers) .....and the teachers were specially trained for PK" IH(M2: 1)

Miss Hana perceived special children and children with SEN as the same things. In revealing her concept of SEN Miss Hana said:

"... there are many categories of children with SEN, such as Down syndrome, dumb, deaf, ...visually impaired, and I think those who are .....I do not know the term..... But .....they are .....like age wise ...he is in form one but mentally (cognitively) he is at primary level... retardation?....but his appearance is normal" IH(M2: 2)

Ms Irah: "I know very little about PK,.....eeemmm.... I heard and I read (about PK), ... it was taught by special teachers..... trained for such students,..... They learn about skills.....I mean.....meaning that .....if.....handiwork or industrial art.....or something lead to all that....." II(M2: 1)

Ms Irah differentiated SEN from normal pupils as those who are incapable to learn in normal circumstances as she said:

"Children with SEN are those such as with Down syndrome, visually handicapped or with hearing impairment as well as physically abnormal. In other words..... those who cannot follow the lesson in a normal classroom (mainstream).....they need special education (programmes) from what we already have now...emm!" II(M2:2)

Ms Mizam: "....in general !.....as I teach in preschool,...I know in general .... PK is education for children those who have.....emmmmm.....lack or imbalance of .....errr.....physical, mental, social and emotional. So.....we want to provide, not remedial ...but..... errr .... To increase their developments in the four areas, in JERI (J= jasmani or physical; E= emosi or emotional; R= rohani or spiritual and I= intelek or intellectual)....though not up to as normal as their peers". IM(M2: 1)

Ms Mizam sincerely acknowledged that she has no idea about SEN as she never came across any cases of SEN. She said (she used some English terms which are presented in italic)

> "I do not know SEN *in concept or in theory*,.....erm ....but during my visit to the LD class in COOP school (a special school in KL), ...all the pupils were *handicapped*, mentally .... or physically... or cognitively, they (pupils)..... the teachers used *special skills*. We.... A normal teacher,... cannot *interfere* inside the world of the children as we do not have the skills to communicate (with them), because those children are sometimes *aggressive* and throw tantrums if we use the wrong approach.....that was what I saw during the visit" IM(M2: 2)

Ms Sali: "... PK is education programmes set-up for handicapped children... and SEN is those who needs PK". IS(M2: 1)

She gave the example SEN as Down syndrome, blind and deaf. Ms Sali in giving the example of SEN, admitted that she has had experiences with pupils with cerebral palsy and Down syndrome in previous years though she claimed that she was never exposed to any course or training related to PK. She said:

> "...I had been teaching a boy with physical problems..... he was on his own special chair (stationed)....I moved to him to teach or during meal times. His mother wanted him to learn in a normal class.... I have no choice. But he is cognitively normal ..... he did learn along with normal peers. I just adjusted my teaching approach to suit him. Last year.....different case, ...a girl with swollen eyes and limited speech.....but her mother never admitted her conditions,.....she was in this class for one year... now she is in year one.... but... I don't know .....her teacher (year one) was quite negative about her...." IS(M2: 2)

Ms Sali confessed that she grabbed the opportunity to learn from whoever knowledgeable about SEN because she believes that some pupils in her class needed to be treated in a different way which is not in her capability. She revealed the situations where she learnt about teaching children with Down syndrome from a trainee who underwent teaching practice in her class. The trainee happened to be majoring in preschool with second options on special education.

Ms Zuyah: "PK is ...I think (understand)... education for special children". IZ(M2: 1)

Ms Zuyah was not certain in distinguishing children with SEN from mainstream children and she refused to explain more on the situation as she said:

> " children who are special.... Sort of handicapped.....they are .... what I know.....are not able to learn in normal situations (mainstream classroom)....difficult to tell (explain)" IZ(M2: 2)

When asked to give examples for children with SEN Ms Zuyah in her Malay Kedah accent/dialect said :

> "erm.... I'm not sure but.....I think those who cannot see, ...deaf or cannot talk.....or severely slow learners....I don't know..." IZ(M2: 3)

Ms Kasma: " ....PK ?, ... PK is something on teaching the children who are behind in learning or different in their needs. They need to be taught in a different .....(according) pace". IK(M2: 1)

Ms Kasma perceived SEN as included those who are underprivileged. She explained:

> "....the children who need special programmes and taught by special teachers. But.....those who are from low SES as well....they are behind.....What do you think? (Asking the researcher). .....SES syndrome (smiled after labelling the situation as SES syndrome). I have cases..... one family .....all the children came (learnt) to this preschool programme (at six years old).....they were very unmotivated because (they were) so poor ....but they were 'clever' in silent.....(yet) dropped out ! (not graduated primary education). I cannot do much as they went to primary.....neglected (at home and in school) ..... a waste ! (child's future)". IK(M2: 2)

Ms Tasya: " what I was told..... PK is specially designed (programmes) for special children such as special schools or special classes". IT(M2: 1)

To describe SEN she said:

> ".....SEN... I think those who are deaf, blind or slow .....(and) those who temporarily cannot learn in normal circumstances " IT(M2: 2)

Ms Alin: "PK is education for children who are not capable to learn in normal education (mainstream classes)". IA(M2: 1)

She elaborately described SEN; these phrases pointed some of her view (in a very strong local Kedah dialect):

> " pupils with SEN?.....(those) with sensory problem, physical problems and behavioural problems as well.....need to be screened and diagnosed before we send

them to PK. Many teachers do not know what to do as we cannot help (them)..... I don't know (as well)" IA(M1: 2)

8.3.2 Preschool teachers' understanding of ADHD and their perceptions of pupils with ADHD (the sample for observation) in their class

The teachers were asked to express their understanding about ADHD. All the eight teachers interviewed claimed they never heard of the term ADHD and the first time they had come across such term was from the researcher's instrument, ADHD checklist (ADHDC) distributed for this study. They expressed their ignorance of the term. Interestingly, two of them claimed that they at the moment were aware about other types of children's problems that may affect the learning process.

Based on the characteristics listed in ADHDC they perceived the meaning of the term ADHD. Most of them were very interested to explore the concept of ADHD by drawing assumptions related to their pupils' behaviours. Two teachers in return asked more information from the researcher in order to answer the questions on ADHD. One of them sincerely admitted that she was interested to know more about ADHD since it is related to behaviours. She professed that most of the preschool children are having part of the problems listed and she assumed some might have ADHD. Another teacher presumed ADHD as commonly found in mainstream classrooms as she related the behaviours listed in ADHDC to ordinary school children.

In comparing ADHD to behaviour problems in their class, some teachers regarded ADHD as severe behaviour problems while others considered the degree of the behaviour problems may differentiate the case of ADHD from ordinary behaviour problems. However, as they already admitted, their ignorance of ADHD led them to perceive ADHD according to their limited knowledge and information. Five of the teachers assumed that children are considered to have ADHD if they have all the 25 behaviours listed in ADHDC while the other three used their common senses to draw the logic by assuming that ADHD occurs in a continuum ranging from mild to severe as

other types of children's difficulties.

However, interestingly, out of ten, only three pupils with ADHD chosen for case studies were considered as possibly having ADHD by their respective teachers as shown in table 8.14 below. All of these pupils are from combined subtype of ADHD (Mahdi, Abdul and Kefli). The pupils of inattentive or hyperactivity subtypes were considered by their teacher as not having ADHD for the reasons of not having enough ADHD-like behaviours.

In the response to the probing questions related to their ratings on the ADHDC at the initial stage of this study, the teachers confessed that they did the rating based on their daily experience with the pupils. Except for the three teachers who assumed their particular pupils might have ADHD, other teachers were not aware of the exceptional needs of the particular pupils with ADHD chosen in their class in terms of specific teaching strategies as they assumed the particular pupils were immature or playful or otherwise spoilt by their upbringing. In additional they were not really concerned as they assumed that the particular pupils would outgrow the problems as they become older. Table 8.3 is the summary of the teachers' perceptions on ADHD related to ordinary situations in their classrooms.

Table 8.3: The teachers' perceptions related to the term of ADHD

Teachers Name	The term ADHD with respect to common behaviour problems (BP)	Teacher's perception on the case/cases chosen from their class
Miss Hana	Still not clear about the term ADHD but the criteria in the ADHDC are obviously related to BP, she assumed those with serious problems may have ADHD.	The case chosen (Rizam) is not considered as having ADHD because he only shown part of ADHD criteria.
Ms Irah	Perceived that children with ADHD characteristics are in almost all the schools and everywhere but it is difficult to draw a line between ADHD and normal BP.	She considered the case (Mahdi) chosen from her class as showing a mild characteristic of ADHD. She perceived that ADHD is a situation that occurs with different severity in different children.
Ms Mizam	Children with ADHD are those with serious BP as listed in ADHDC	She considered the case, (Justi) as not in the ADHD group as the boy only had a number of behavioural problems and admitted that she never received any pupil with serious behavioural problems (with 25 behaviours listed in ADHDC)
Ms Sali	Considered some overlapping between ADHD and BP. Hence some pupils with BP might have ADHD but not all	She considered one of the case in her class, Abdul as possibly having mild ADHD but not Hafzi since Hafzi can learn along with the peers and his problems did not affect others' learning.
Ms Zuyah	Considered children with ADHD are more severe than BP but assumed it's difficult to draw a line	She considered the case (Malik) chosen from her class as not in the ADHD group as his behaviours were considered normal for some pupils at that age.
Ms Kasma	ADHD is totally different from normal BP among the children where ADHD is a very severe problems	She was not sure whether the case (Kefli) chosen from her class has ADHD but confidant that his behaviours were more on ADHD. She claimed that she never experienced a pupil with all the 25 behaviours listed in ADHDC

Teachers Name	The term ADHD with respect to common behaviour problems (BP)	Teacher's perception on the case/cases chosen from their class
Ms Tasya	ADHD and normal BP are almost the same in term of symptoms but assumed ADHD is more difficult to teach as more serious behaviours in ADHD	She considered the case chosen (Bidin) from her class as not in the ADHD group and conveyed that she had a short experience with pupil who was deaf and hyperactive (a true ADHD in her perception). Her perception was based on the suitability of ADHDC in rating her pupils in the class
Ms Alin	Pupils with BP are varied and at least in 3 groups; mild moderate and severe and ADHD is suitable for those with moderate BP while the children with severe BP should not be in the ADHD group.	She considered two pupils chosen for the case study (Narmi and Rozi) were not in the ADHD group as they have normal behavioural problems for this age group. The claim was based on her previous experiences with pupils with severe behavioural problems. She expressed her worries about the group with severe BP and considered them as a juvenile candidate (to be) in the future.

8.3.3 Preschool teachers' understanding of inclusive education and their perceptions on the implementation of inclusive education in Malaysia

The teachers were asked to convey their understanding of the term inclusive education (IE). They sincerely expressed their ignorance of the term and most of them claimed they were apart from the special education programme and knew very little about it.

8.3.3.1 The teachers' understanding of the term inclusive education

Seven of the teachers replied that they had not heard the term before. Nevertheless they admitted to have heard generally about the special classes or special schools run by the special education department but they had no clear perception of the types of education related to it. Two of them conveyed that they have totally no idea about IE while the others assumed that IE is something related to special classes in mainstream school or special remedial classes in primary schools as part of IE. On the other hand one teacher

associated IE to the only pupil with SEN she ever knew (her friend's child) who, according to her, was educated in special schools/programmes for a certain period until he gained certain skills, before he was eligible to join the mainstream class. Another teacher assumed integrated programme as IE since she knew about integrated class for pupils with leaning disabilities in the district from state education department.

One teacher admitted she heard the term IE during her initial course but did not give proper attention as it was not related to her teaching options. She presumed the remedial programme (RP) was related to the IE. RP was one of the programmes initiated by the special education department nation-wide in order to assist the primary schools in overcoming the mainstream children's literacy problems. As RP was implemented in every primary school, all the preschool teachers interviewed knew about the programme. RP utilized the withdrawal system, where the children diagnosed as requiring remedial teaching were grouped together in one class. They were taught by trained remedial teachers and the focus was on literacy and numercy. Table 8.4 is the summary of the teachers' understanding of IE.

Table 8.4: Preschool teachers' understanding of IE

Teacher	Understanding of the term IE	Note
Miss Hana	Had heard the term during the initial course (last year) but not very sure of the type of the education it referred to. Presumed the remedial programme (RP) as one of the programme related to IE	Attended two hours of introductory course on SEN during initial training
Ms Irah	First time come across the term IE. She had admitted her ignorance but speculatively perceived that the special education classes in mainstream schools and remedial programmes as part of IE	Concerned more about the teachers' attitude towards children with SEN as she was sometimes not satisfied with her colleagues who were negative about difficult pupils and reacted negatively to them.
Ms Mizam	First time she had come across the term IE. She had admitted that she has no idea about IE and refused to comment.	No knowledge about SEN until visited a LD programme in a school she attended for an environmental course.
Ms Sali	First time coming across the term IE. Expressed her ignorance of the term. Speculatively associated IE to transition for pupils with SEN between special schools/programmes to mainstream classes	Knew a few programmes for learning disabilities but not very sure of the nature of the programmes
Ms Zuyah	First time come across the term IE and knew nothing related to IE	Knew about special school for visually impaired in the district
Ms Kasma	First time come across the term of IE. Admitted her ignorance and assumed that special programme in mainstream schools as part of IE	Knew about the special education class (LD) in the neighbouring school and once suggested one parent to send her child with Down Syndrome to the class
Ms Tasya	First time come across the term. Admitted her unawareness and assumed the integration programmes as IE.	She learnt the term integration programmes from SED staff
Ms Alin	First time coming across the term IE. Perceived the remedial programme in her school as part of IE	Learnt about children with difficult situation (SEN) from regular medical programmes in local radio networks

Note: Remedial programmes (RP) are the compulsory programmes for children in lower primary who had not acquired 3 R's skills. It is an integrated programme set-up in every primary school coached by specialised remedial teacher.

8.3.3.2 The teachers' perceptions of the implementation of IE in Malaysia

As the teachers were obviously not clear about IE, vignettes of IE in the Malaysian context were used in order to obtain their opinions on the implementation of IE. The vignette was about the situation where pupils with several types of SEN are going into mainstream classes in the neighbourhood schools (see appendix 6). Every teacher was given the situation mentioned above and they were asked to convey their views on the situations. Their perception on the implementation of IE in Malaysia was then gathered from the responses. The teachers' views on the implementation of IE were varied.

In fact, all the teachers interviewed claimed they had never heard of or been informed about the MOE's intention to place children with SEN in mainstream classes. Some revealed that they knew of the cases where pupils with SEN were in mainstream schools but considered it as a special case.

Some teachers considered IE as sensible at preschool level since the MOE's preschool programmes are provided with assistant teacher and other facilities that might benefit the pupils with SEN. Conversely, most of them believed that IE is not suitable in primary or secondary schools for many reasons. Some mentioned the school system and the teachers' ability to deal with children with SEN as the main obstacles whereas others predicted the large class size and the curriculum as another problem to be concerned with.

Some other teachers were negative about the implementation of IE as they claimed that they as well as their colleagues in mainstream did not have the relevant skills to adjust to the variety of needs of the children with SEN. They argued that the meaningful IE implementation possibly only materialise if certain steps were taken in advance to

prepare the mainstream system for pupil with SEN. The teachers' opinions are categorised as below:

Teachers' training; initial courses and in-service courses on SEN were seen as major platforms to gain teachers' commitment. Some teachers suggested that in-service courses in various fields of SEN should be made available in most of teachers training colleges nation-wide so the access to the courses are more flexible to teachers' convenience in terms of the training place. In other words there should be available courses for the teachers in nearby teachers training college.

Outreach: information on children with SEN and their needs was considered by the teachers interviewed as a way to convince teachers in mainstream school to take responsibility in teaching children with SEN. They argued that if the teachers know more about SEN, some might open their heart to teach SEN. In addition, some teachers interviewed suggested more incentives in upgrading the teacher's qualification given, to encourage mainstream teachers' involvement with SEN. None of the teachers interviewed was aware of courses at a basic degree level related to SEN, run by one of local university in cooperation with one of the teacher training college.

Screening procedure: One of the teacher interviewed suggested the MOE to prepare the instruments for diagnosing the difficulties among the mainstream pupils in order to make teachers aware the actual situation and put more concerns on the pupils with difficulties.

Table 8.5 is the outline of every teacher's comment and perceptions on the implementation of IE in Malaysia.

Table 8.5: Preschool teachers' perceptions on the implementation of IE in Malaysia

Teachers' Name	Perceptions on the implementation of IE	Confidence in dealing with children with SEN
Miss Hana	Considered that IE needs a lot of adjustment in the system as in term of infrastructure, cost and teachers' training and she believed that it is difficult to achieve a total IE. However she believed it is sensible at preschool level	Not confident for the time being as she needed more experience in teaching the normal children before turning to the difficult children.
Ms Irah	Considered that IE can be implemented at preschool level as the class is provided with assistant teachers and the number of pupils is only 25 in maximum. She expressed her doubt for IE in primary and secondary school classes as most of the teachers were assumed hardly to know anything about SEN. However she believed that the integration class might benefit the pupils with SEN more and easier to manage if the MOE really concerned about SEN. She stressed teachers' willingness and knowledge as key factors for the implementation of IE	Confident that she managed one or two difficult pupils in her preschool class but not the one with severe problems. She claimed that currently she has at least four pupils with SEN in her class, and she felt satisfied with the teaching and learning done.
Ms Mizam	She believed that the children with SEN should be dealt by special teachers in order to give the appropriate treatment and to avoid the frustration in both; teachers and pupils. She addressed her concerns that the MOE will take the matter seriously and not implement such important programmes without any painstaking research.	She admitted that she has no confidence in teaching special needs either in a mainstream class or in a special class and she was not interested to try it as she claimed that she lacked of patience in such children.
Ms Sali	She strongly believed that children with any obvious difficulties couldn't learn in mainstream setting because the number of pupils in primary and secondary class are too big for a teacher to accept the extra responsibility of children with SEN. She was confident that such children will be neglected in the mainstream class and she gave a few examples of her previous preschool pupils with difficulties who were left behind in the mainstream primary classes. Willing to take one pupil with SEN at a time in her preschool class as the class was considered relatively small	Confident to take responsibility as she gained more experience after teaching pupils with SEN. Felt satisfied teaching underprivileged children and gained more interest in children with SEN after teaching three types of difficulties.

Teachers' Name	Perceptions on the implementation of IE	Confidence in dealing with children with SEN
Ms Zuyah	Considered that IE is difficult to be implemented as most of the teachers were not exposed to SEN and the class size (number) are too large for one teacher to give personal attention for pupils with SEN.	Not confident in teaching children with SEN because lack of skills needed
Ms Kasma	Considered that IE is only suitable for children with mild difficulties provided the teachers are trained for teaching children with such difficulties.	Not really confident but willing to try if given a child with mild conditions and suitable for mainstream setting
Ms Tasya	Considered that children with mild difficulties is suitable for IE because bright pupils might influence and help in the learning process and the teachers not necessarily need to be well trained in special education. She believed that those with moderate and severe problems cannot learn in mainstream setting.	Confident in teaching children with mild sensory problem and slow learners but not those with obvious problems such as Down syndrome or hyperactivity.
Ms Alin	Considered that children with any types of difficulties are not suitable for mainstream setting and she suggested the most inclusion level is the special class in the normal school. Claimed that previously she had experienced difficult situations with pupil with hearing problem and pupil with severe behavioural problem.	Not sure about her skills in coping with difficult pupils but willing to take responsibility if given the special class with small number of pupils, provided in-service training are available as an on going courses.

8.4 CONCLUSION

This chapter has introduced the empirical examples of ways preschool pupils with ADHD cope with daily lessons in mainstream schools in Malaysia. Although the pupils with ADHD vary in their classroom behaviours, the patterns occurred can lead to inferences made based on these ten cases, in particular:

a. The complex nature of the pupils and their uniqueness that lead to specific needs in learning. The findings from these qualitative data analysis showed many aspects

concerning preschool pupils with ADHD in Malaysia. There are no uniformity of the ADHD in the ten cases studied. It is in line with the complexity of the nature of ADHD.

b. The diversity in educational provision in the MOE preschool and the teachers' resourcefulness state in dealing with the individual needs of pupils with ADHD.

c. The additional concerns on implementing inclusive education to cater for all types of SEN in terms of teachers' readiness and the school's philosophy in order to create a common goal to direct teachers' willingness in accepting pupils with ADHD.

Overall the main findings from both quantitative and qualitative data analyses reflect the complexity of ADHD in terms of the nature, the needs, the constraints and the predicament in Malaysian context from an educational point of view. The wider discussion on the subject of ADHD, as it relates to national and international contexts, in understanding the educational provision for Malaysian children with ADHD is presented in the following chapter.

Chapter 9

DISCUSSION, CONCLUSION AND RECOMMENDATION

This chapter discusses the key findings of the study. Having reported the ADHD concept and the characteristics of individuals with ADHD in chapter 3, general issues and specific situations (e.g. learning and classroom interaction of 10 ADHD cases) are discussed in this chapter in relation to five issues that emerged from the data analyses. Recommendations related to the issues are presented at the end of this chapter. Although this study was carried out in Kedah and Kuala Lumpur, its results may be generalised to the Malaysian preschool children in the government's Ministry of Education (MOE) preschool programmes as a whole because in terms of administration, structure, curriculum and practice, these programmes have been run in a uniform configuration and teaching model. Additionally all the teachers were trained by the same organization using the same curricula (the MOE). The results may also be generalised to other children from low socio-economic status (SES).

9.1 THE DEVELOPMENT OF ADHD CHECKLIST (ADHDC)

The ADHD Checklist (ADHDC) was developed with two purposes. First, it was for the present research in order to identify pupils with ADHD who would then be investigated as case studies. Secondly, it was to develop a screening instrument that might be used subsequently to the present research on Malaysian preschool pupils. Content and structure of ADHDC were informed by the review of literature, considerations of Malaysian context and the results from the pilot study.

The ADHDC was found to have sound psychometric properties. Its internal consistency was satisfactory (Crombach's alpha = 0.88, N=531) and test retest stability was also satisfactory (Correlation coefficient (Pearson's r) = 0.93). In addition the factor analysis produced a coherent factor structure with a hyperactivity/impulsivity factor and separate

inattentiveness factor. Similar patterns of factor loadings were found when further factor analyses were carried out for boys and girls separately.

The analysis confirmed that the ADHDC was an appropriate instrument for use in the present research. The next section will provide further information on ADHDC, e.g. gender distribution. Taken together, the analysis of the ADHDC suggests that it is an appropriate instrument for use amongst Malaysian preschool children. Consequently both aims for its developments were met.

9.2 THE DEMOGRAPHIC CHARACTERISTICS OF PUPILS WITH ADHD

The findings of the quantitative data clearly show that ADHD found in Malaysian children is comparable to the ADHD features represented in children from other countries.

9.2.1 Gender

There were gender differences in ADHD symptoms among the pupils in the sample as measured by the ADHDC. In line with other studies boys were more likely than girls to be rated by their teacher with higher scores on most of ADHDC items (Buitelaar, 2002; Blachman and Hinshaw, 2002; Diller, 2002). The same situation was found for the overall scale (total) and both subscales (total for inattentiveness and hyperactivity/impulsivity).

9.2.2 Location

In terms of location, the majority of ADHDC items were not significantly different but 8 out of 25 items were significantly higher scores in rural samples compared to urban. Seven of these items were from the hyperactivity subscale. Speculatively ADHD may be 'culture dependent' as something considered normal by urban teachers and may be less accepted by rural teachers because the rural population as mentioned in Chapter 2 is less exposed to modernisation: children may be expected to be less active in conduct (behaviours) than the expectation of urban teachers regarding their pupils. This may be

comparable to gender where girls are expected to be less active than boys (Pineda et al., 1999). Hence culture in different communities may influence the way teachers report ADHD symptoms. In other words it is argued that the most likely explanation for this finding is that teachers tend to decide and translate the listed behaviours on the ADHDC according to their own values, and how they view the symptoms. Rural teachers tended to score their pupils higher on the Hyperactivity subscale than their counterparts in urban schools because these behaviours may be less acceptable by rural community, hence rural pupils are frequently penalised with higher scores. Further investigation is needed to verify this speculation.

The distribution of scores on the ADHDC was reasonable, with a minority of about 11% being scored at points 4 and 5 for the overall scale and the hyperactivity/impulsivity and inattentive subscales. There were 9 pupils identified as having symptoms on both subscales inattentiveness (7 and above) and hyperactivity/impulsivity (6 and above). These represented 1.7% of the total number of pupils in the sample. These pupils are considered as having ADHD-combined (ADHD/C). The evidence from the literature suggests that children at preschool age level are more likely to have ADHD/HI than ADHD/IA, and that ADHD/C is less frequent among the subtypes, a finding replicated with the present study.

The use of the ADHDC was based upon a review of the international literature which suggested about 10% of school children have ADHD. This prevalence was used operationally to define the cut-off for the ADHDC. Consequently it cannot be stated that there are 10 % of preschool children in Malaysia with ADHD as this would be tautological and the "true prevalence" of ADHD amongst Malaysian preschool children as with any other epidemiological estimate is an artefact of the definition and the instrument of measurement. It is important therefore to consider what other factors might affect the prevalence rate among Malaysian preschool pupils.

1. The sample is drawn from the general school population. None of these pupils were officially diagnosed with any special educational needs, let alone ADHD. As suggested by Wilens et al (2002), "*.. the nonreferred preschoolers may manifest less severe psychopathology and comorbid states...*" (p. S34).

2. Likewise, only those with manageable behaviour remain in the mainstream classroom whereas their counterparts with severe behaviour problems are either in special schools or not attending any preschool education. The latter is more probable as in reality very few preschool age children are in the special preschool programmes, as mentioned in chapter 2 (see 2.5.3). In addition it is typical for Malaysian parents to keep their exceptional children away from the public and in this case parents may assume the young child's behaviour would be improved in the period of a year before entering formal school. Another possibility is that the parents of children with moderate or severe behaviour problems may choose private preschool programmes so that the child can receive extra attention from teachers as a considerable tuition fee is paid and demand for a better provision may be justified. However private institutions are only available in urban/suburban areas. Programmes in religious institutions are another alternative for preschool education. Some Malay parents may choose to send their offsprings for early religious background as the religious practices are typically justified as a foundation for good discipline.

3. The other potential explanation is the discrepancy in age group. The 10 % cut-off was chosen from research studies of school-aged children, whereas the present study included children in preschool. Also the age of children in preschool varies in different countries. Preschool children in Malaysia are between 5-6 years whereas in other studies (Pineda et al. for example), preschool children were defined as age 4 to 5 years olds and children at 6 were included in another age group. The sample's age in this study ranged between 5 years to 6 years 9 months. This means that part of the sample in this study may fall in a different group if the same age grouping definition as Pineda et al. is applied and hence ADHD/IA is more probable.

4. A further possible reason is that actually there are more children with ADHD/IA subtype in Malaysian preschool children. If this is the case, is it related to cultural and contextual factors? This hypothesis is suggested as the Malaysian norm and traditions expect children to be obedient and not questioning adults and do whatever they are told by their teachers as described by Hajah Asmah (2000). These may be compared with cultures where children are permitted or even encouraged to challenge adults, move around the classroom more freely and where lower expectations of obedience exist. Any predisposition to ADHD-like behaviours resulting from biological factors must be both interpreted and evaluated against such cultural norms of expectation. The norms may make introverted pupils suffer in silence and extroverted pupils in contrast may develop a different identity in order to cope with any mismatch between their needs and the educational provisions, facilities and environments. This, in other words, may suppress the exhibition of hyperactive behaviours in both groups. For example, from my childhood experience I learnt about the norm and was never outspoken or aggressive to adults or reported any harmful experiences in school to my parents because the dispute reflected my misbehaviour and it would in return be punished.

In relation to the above suppression of the hyperactivity behaviours in the Malaysian context, external factors such as environment and teachers' acceptance, as indicated in my model of needs and situation of ADHD children in the classroom (see figure 3.2), influence the way they behave in the classroom. This phenomenon seems contradictory to that described by the biological model of the ADHD concept. The findings of this study appear to support the current argument of some scholars (see Purdie et al., 2003 for a review) who propose that ADHD symptoms are actually influenced not only by internal but also external factors such as the surroundings, teachers' attitudes and others. In this case 'external' refers not only to the immediate environment but also to more pervasive social norms resulting from strong cultural factors. Neven et al (2002) as well as Cooper (1999), for example, argue that ADHD is a multi-factorial inter-relationship between individual, social and emotional experiences of the child.

9.3 THE DIFFERENCES BETWEEN CHILDREN WITH ADHD AND THEIR TYPICALLY DEVELOPING PEERS

The findings of the structured observations were straightforward: off-task and other unfavourable behaviours were more likely to be engaged by pupils with ADHD compared to their control peers. These could be grouped in two patterns (see table 7.35 for this grouping):

1. The most common statistically significantly difference found in all pairs and all sessions (overall and sub sessions) was looking around (except for the pair of Kefli: Atan in academic session). This behaviour represents the unfocused situation, and this implies that all ADHD pupils in this case study sample were more likely to be unfocused (core ADHD features). Out of seat and daydreaming were also highly common but the findings revealed that these two behaviours were more likely to be engaged by most pupils with ADHD overall and/or in academic session and slightly less in least academic sessions.

2. Fidgeting, vocalizing/calling out, interfering with others and playing with objects during academic sessions or playing alone during play times were also significantly different in many cases for both overall session and sub sessions. These were found in pupils with either ADHD/HI or ADHD/C, except Rizam (inattentive subtype): see table 7.35).

Hence the pattern in 1. (above) seems to support the assumption that pupils with ADHD have distractible behaviour (Douglas, 1983); being unable to focus. The other two symptoms which manifested off-task behaviours during the lessons, show that pupils with ADHD were more likely to exhibit more symptoms during less flexible situations. The pattern in 2. above implies that hyperactivity/impulsivity symptoms were more likely to be found in those with the ADHD/HI and ADHD/C subtypes in this study. The findings are in line with the literature (McBurett et al., 2001). However, regarding the individual case of Rizam, the peculiarity (as he was expected to be from the inattentive subtype whereas the analysis of the targeted behaviours was in the reverse situation) may be

explained by Rizam's ADHDC rating score where several hyperactivity/impulsivity symptoms were positively rated (see table 7.16) but not enough to met the stringent six-symptom threshold.

Taking individual pupils as the focus for the accounted behaviours, it is clear that targeted behaviours were generally significantly different between the ADHD and comparison peers. The number of the behaviours (out of 6 behaviours in the overall category and 7 behaviours in the separate sessions) between the ADHD sample and their comparison peers according to session are simplified as in table 9.1 below. It is clear that overall the pupils with ADHD are more likely to be significantly different (targeted behaviours) from normal peers in academic sessions although the effect is only slightly weaker for the least academic sessions. The exception is for Kefli : more during least academic session. The possible explanation for this concern will be discussed in the next session linked to pupils' profiles as an unusual case in this study.

The results may imply that the type of tasks in academic sessions have an impact on most pupils with ADHD. In particular the inflexibility of the events may increase the possibility of pupils with ADHD exhibiting the symptoms. However, one may question whether the behaviour was a result of ADHD symptoms or due to inappropriate environment or tasks. This prospective question is a reasonable future research topic to find the specific classroom/environmental and cultural effects on the learning outcomes of pupils with ADHD. Nevertheless the behaviours may be due to more than one possible reason related to pupils and their surroundings (Olson, 2002) as proposed in chapter 3 (section 3.10.2, in particular figure 3.2). Again this matter will be discussed in the next session with reference to teachers' profiles.

Table 9.1: The number of significantly different behaviours between pupils with ADHD and their comparison peers based on structured observation findings

Pair	Overall (Maximum 6)	Academic (Maximum 7)	Least academic (Maximum 7)
Narmi : Amin	6	6	6
Mahdi : Osman	6	6	5
Kefli : Atan	5	3	6
Rizam : Maza	5	4	4
Hafzi : Ali	5	4	4
Bidin : Fizal	5	4	4
Malik : Fauzi	5	4	3
Justi : Aziz	5	4	3
Abdul : Afli	5	4	2
Rozi : Dilah	4	3	2

Note: Names in bold are pupils with ADHD.

9.4 SIMILARITIES AND DIFFERENCES AMONG PUPILS WITH ADHD

Although the pupils with ADHD were found consistently to differ from their comparison peers further investigation revealed the extent to which the ADHD group was homogenous or heterogeneous with respect to their behaviours. Other fundamental issues related to aspects of the pupils (with ADHD) and teachers' characteristics in classroom situations are categorised into 2 concerns as follows.

9.4.1 The common pattern of the profiles of Malaysian pupils with ADHD

The responses of pupils with ADHD in the activity 'a line for a walk' show that to a certain extent all the sample were unable to focus and lost their concentration during the activity. Some showed disinterest behaviours shortly after the activity started and others continued with tense or hyperactivity/impulsive signs. This result implies that in the 'plan situation', the entire sample exhibited core features of ADHD symptoms: inattentiveness or/and hyperactivity/impulsivity behaviours. Thus, this finding again supports the

selection of sample (pupils with ADHD) as appropriate case studies based on teachers' rating of ADHDC.

The findings of structured observations between ADHD and comparison peers were discussed in 9.2. The results of individual child behaviours show that pupils with ADHD could be grouped into 3 clusters namely, those who seemed to be affected by the specific type of sessions; behaved in a similar manner in both academic and least academic sessions; and those whose behaviour showed inconsistency across and between types of session. These findings reflect that ADHD represents a heterogeneous population which displays wide variation in the nature and severity of the symptoms, as described by Barkley (1998).

Although pupils with ADHD are heterogeneous in character, there were patterns that emerged from the data analyses of pupils with ADHD profiles. The patterns were in line with the manifestations reported in the review of previous researches: in general most of them were affected by the requirements of the academic lesson as highlighted in the previous section. To investigate the entirety of ADHD symptomatic behaviours in relation to the exceptional situation related to ADHD and classroom atmosphere, information was collected including views from pupils with ADHD and peers as well as adults in the class. As pointed out in chapter 3, ADHD behaviours can be studied from two perspectives (biological and psychological/educational perspective). This study adopts a psychological/educational perspective that the behaviour can be learnt and unlearnt. The data from unstructured observations and interviews revealed that the sample of pupils with ADHD tended to have characteristics which were in line with what was described by many scholars including Cooper and Ideus (1996); Hughes et al. (1998); and Campbell (1990), namely:

1) Hand in incomplete or untidy work (9)
2) Have very few friends and the friendship is not long lasting (9)
3) Bored with routine tasks and/or refuse to do them (8)
4) Use inappropriate verbal requests (5)

5) Play with or befriend the same peer/peers during free time (7)
6) Overly active (7)
7) Forgetful (8)
8) Be dominant and focus on themselves or have a bossy manner (4)
9) Moody (4)
10) Overreact due to being emotionally sensitive (3)
11) Blaming others for any negative outcome particularly during group work for any mistake they make (5)
12) Make negative statements about others (5)
13) Have difficulties to adapt to new situations (5)
14) Stay by themselves (4)

All the above characteristics are socially related and these were in line with the findings of previous research (Cunningham and Boyle, 2002; Gentschel and McLaughlin, 2000; and Brendgen et al., 2002). In addition to the observation procedure, a brief interview with the pupils on the way they resolve conflicts revealed that teacher's feedback and encouragement were important, and also that more personal attention was expected, to make them more likely to perform appropriately in their interactions, academic works, or/and to behave accordingly. The exploration of the nature of interaction displayed by particular pupils with ADHD revealed that social and global functions with regard to learning varied within and between the children. Nevertheless they were more likely to be neglected or rejected during classroom activities or interactions.

9.4.2 Variation in pupils with ADHD

This study also used verbal communication (informal interviews) to collect pupils' views, but as predicted based on findings by Wilens et al. (2002) and Cooper (1993) the samples in this study were not always good in articulating their feelings or views. The attempt to collect pupils' views on their role in school as described in chapters 5 and 6 was made with limited success. These young pupils' views were not much revealed by structured interviews but rather through the interpretation of other communication events (non-verbal and/or verbal). This drawback was not unusual because culturally Malaysian children are

not advanced in expressing their views or feelings (as mentioned above) compared to Western children. The findings from the limited data show that the majority (6: Rizam, Abdul, Hafzi, Malek, Kefli, and Narmi) of these pupils were more willing to talk/boast about their belonging or things they were good at or they liked most, compared to other subjects. A few of them indirectly revealed that they understood the consequences of the way they behaved. For example Malek rationalised the reason for his father's punishment and his teacher's comment. Abdul on the other hand revealed what he liked most in schools and justified his unpunctuality in school every morning. From the pattern that emerged, it could be said that most pupils who responded in the interviews were from the ADHD/HI or ADHD/C group (except Rizam). However any conclusion drawn from this approach must be tentative as the children provided limited interaction and conversation during the interviews.

Consequently the findings cannot provide a satisfactory answer to the question of pupils' perceptions of their role in school but rather create another question. Most pupils with ADHD who were willing to talk conversed about things they have/like rather than answering questions that needed thinking effort or something they do not like, the question that arises is whether the situation was due to methodological issues or related to the Malaysian cultural values regarding verbal interaction between children and adults. Hence, this question could be discussed in the context of future studies in favour of creating changes in educational research: for children's right to be heard (Lewis and Lindsay, 2000) and to highlight 'a caring society in school community'.

Within the context of ADHD in the cases studied, pupils were traditionally expected to behave well and obey their teachers. When pupils deviated from the behaviour norm, they easily retracted as they realised they were not expected to do such things (e.g. to question the teacher's instruction/request or to behave out of norm) yet the awareness was unsustainable. The clear examples of this situation were found in most cases of assertiveness in Kefli, Abdul, Rizam and Narmi where these pupils compromised easily when the teacher or assistant teacher intervened within any crisis situation, no matter what

approach was used (autonomy or diplomatic). The possible explanation concerns cultural values and moral compulsion. However the degree of their negotiation was varied. The opposite situation was found in a few cases where pupils just ignored teachers' instructions they disliked (e.g. Rozi and Justi: perseverant behaviour was not effectively controlled by an authoritarian approach). One possible explanation for the variation in the pupils' reactions is that it may be influenced by other problems (comorbidity) as argued by Conners (1997) and Kadesjo and Gillberg (2001). According to Kadesjo and Gilberg children with comorbid problems "by far out-number those with ADHD only" (p. 491). For example Rozi apparently has speech problems and mood instability. These problems were noticed during the observation period and were supported by the teacher's comments/perception, whereas in Justi's case, low self-esteem/confidence was noticed. The other explanation could be due to the process of upbringing. Many (6) teachers in this study perceived that pupils' behaviours were influenced by their background and stressed parenting was an important contributing factor. See also Hectman, (1996).

Kefli was an uncommon case in this study (as mentioned in the previous section). The possible justification is that Kefli was from upper middle SES family as described in 8.2.7. He had more exposure in life compared to others (from lower SES) and furthermore he is bilingual. These factors are unusual in this study's context. Other beneficial accounts in his schooling context are the teacher's profile (related to teaching approaches/strategy) and the classroom environments. His learning style was accepted by the teacher and tolerated by peers. His upbringing seemed to influence his attitude towards learning task/completing schoolwork. This argument is based on the way he engaged in written tasks differently from the other 9 children: perfectionist and also ambitious, in that he wanted to be the first and best in many things. Hence despite the symptoms, he seemed to cope with classroom demands and with his teacher's support.

Nevertheless, the variation in pupils' characteristics is reasonable as ADHD occurs on a continuum. There will never be two pupils with ADHD, who exhibit exactly the same characteristics (Green and Chee, 1995) and the present findings, therefore are in line with

the view that there is a degree of uniqueness in the nature of ADHD. The learning environments, as linked to teachers' profiles are considered in the next section.

9.5 Teachers' profiles and learning environments of pupils with ADHD.

The MOE Malaysia sets out the preschool teachers' roles in handling hyperactive behaviours and specifically emphasises the development of child personality and the adaptation process, addressed in the statement "*...preschool teachers should know the various ways in which to assist those who are very active and to overcome their emotional outburst through activities which will benefit the child*" (MOE: p.7; book 1). The findings on profiles of teachers' knowledge regarding SEN, ADHD and IE suggested that teachers were not aware of the gist of the terms. However, they shared similar perceptions of the nature of ADHD: a condition indicated by behavioural symptoms as listed by the researcher on the ADHDC. Some of them used common sense to assume the variety of ADHD cases corresponding to the severity of the symptoms. Teachers' attitudes towards pupils with ADHD (interpreted by their response in the interview, the observations and their approach in teaching ADHD) were positive. They positively accepted the pupils' conditions and were confident the pupils would do well in the long term. This finding is not supporting Haniz's (1998) finding on Malaysian mainstream teachers' attitude towards the implementation of inclusive education (IE) for SEN children. In other words, this finding may indicate that pupils with ADHD are more acceptable by mainstream teachers compared to other SEN group. It is reasonable because teachers in the first place did not even know that the pupils had ADHD/SEN. Furthermore, pupils with ADHD are physically no different from typical children whereas pupils with some other SEN are more apparently different in their basic needs.

Although teachers were positive about pupils with ADHD in their class, in terms of their approaches to teaching and planning tasks or activities, it could be said that there were clear patterns of sporadic mismatch between the individual needs of pupils with ADHD and the learning condition. The findings show that instead of their exceptional needs most

pupils with ADHD had been treated as a typical child. This means that they were denied the opportunities to learn according to their needs, not to mention to develop their own interests. The dominance of 'chalk and talk' approach is not encouraged for preschool education (as construed in the MOE curriculum guidelines), yet was found in most cases. Paper and pencil activities, drilling strategy, and memorization skills dominated the teaching and learning sessions in most of the classroom. Pupils with ADHD have less chance to express and perform what they know and understand due to the mismatch. Interestingly, despite the common practice, most teachers were aware that pupils' interests and needs were not met and they argued that the mismatches were due to their lack of knowledge and training in SEN. Most teachers admitted that they used commonsensical trial and error approaches in their practice to overcome the deficiency (in dealing with exceptional pupils). Nevertheless the emphasis on written literacy and numeracy dominated the teaching goals in most cases. Unpersuasive environments/situations were found, for example less positive reinforcement (more negative comment or reprimand); monotonous or less challenging activities (repetitive or insignificant to pupil's interest); unclear instructions; in some cases pupil's important requests/questions were not attended by the teacher; and inconsistency in giving instructions were more likely owing to limited training and expertise. These are not beneficial to non-ADHD children either.

The teachers' role in mediating pupils' behaviour is crucial but this discussion is limited by the data collected as it was only intended to relate to pupils' circumstances. Nevertheless the MOE Malaysia stressed in one of the preschool guidebooks "*the effectiveness of children's learning depends on the wisdom and efforts of the teachers*" (p.4) (MOE: 1999 book 1). From the observations and interviews, it was clear that teachers' efforts were varied in every individual case. For example, teacher in SU4 used more extensive strategies contrasted with the teacher in SR4. The approaches and strategies used for dealing with the cases by the first teacher were more towards the individual needs of the pupils with ADHD whereas in SR4 a whole class approach was more dominantly applied and consequently the exceptional needs of pupils with ADHD

were addressed by an assistant teacher (untrained personnel). Nevertheless most teachers claimed they used their best efforts in spite of their constraints. Majority of them tended to treat their pupils with ADHD equally as typical children (no specific approaches or strategies: as revealed by the teachers). These teachers were fully aware that these pupils reacted differently to the similar activities or rules.

The findings also revealed that most of these teachers were satisfied with the progress made by these pupils with ADHD because although their academic improvement were limited compared to peers, their classroom behaviours were much improved within 8/9 months (compared to their behaviours at the beginning of the year). This may be the reason for the teachers to perceive the 10 pupils with ADHD as not problematic even though they are not the typical children at their age. Hence, despite the evidence from the ADHDC and observations, only a few teachers perceived the chosen pupils with ADHD in this study as 'having ADHD'. These findings have important impact on the implementation of inclusive education for preschool children in Malaysia.

It is speculated that teachers' personal profiles are also related to the approach they adopt. All of them used common strategies in dealing with pupils' behaviours and on trial and error basis, some teachers kept on with different ways until they were satisfied, while a few gave up and treated the pupil/pupils the same as others. Therefore on the basis of these data it could be said that the mismatch between individual needs and the learning conditions of pupils with ADHD was due to teaching skills and training issues rather than attitude/acceptance. Hence teachers' teaching profiles do not make it possible for pupils with ADHD to achieve the optimal level in learning, their welfare and rights are adversely affected. For further consideration of this issue, more investigation is needed. These findings have several implications as they indicate that the pupils with ADHD may be at risk of persistent learning and attention problems as argued by many researchers (Cooper, 1993; Gaultney, et al. 1999). The emergent issue is, how does the MOE Malaysia, in order to broadly implement the intended inclusive education in Malaysia deal with the variance.

9.6 CONCLUSIONS AND RECOMMENDATIONS

The major conclusions that can be drawn from my findings are:

- The quantitative findings show that factors regarding ADHD in Malaysia are more or less similar to cases in other places.

- The mixed methods approach provided a better understanding of pupils with ADHD and at the same time the instrument used to screen preschool pupils was validated by qualitative data in this study. Hence the ADHDC is a major contribution to the MOE Malaysia, as it may be used as a screening tool for ADHD in Malaysia in the preschool population. More children, therefore, could be screened by teachers in the future producing information that could be useful for policy makers. The information is also important for administrators and teachers to determine how to plan advantages environments for pupils who fail to learn in traditional school settings.

- The cases studied revealed that there was a lack of elements of outward affection in all the Malaysian preschool classes. Outward affections, which are commonly practised in western society, are crucial in dealing with ADHD. The use of verbal encouragement (praise words such as 'good' 'brilliant' or 'clever'), motherly body stroke (touch) during the time children were upset or in a state of discomfort and affectionate terms (such as love, darling and dear) should be luxuriously used not only for pupils with ADHD but the whole class. These elements can be nurtured as an expanding model for 'caring society' by showing/modelling to young pupils to appreciate others. Encouragement with appropriate verbal and non-verbal expression will form a basis for a good model. In addition more emphasis should be given to show 'what is right' instead of focusing on 'what is wrong' so pupils will have the choice to correct their actions (Malaysians tend to say 'don't do that' but not show how to do other than that).

- The sample of ADHD in this study had not been properly diagnosed but was identified by the ADHDC which was used as a screening device. Diagnostic procedures

for young children are not simple but not unfeasible. The multidisciplinary team in Malaysia should provide access to diagnosis for teachers and/or parents with possible ADHD cases. This service must come as a priority to the MOE and other related agencies not only for ADHD but other SEN categories. Pupils with comorbid conditions should be diagnosed accurately so all the difficulties might be addressed appropriately in the provision.

- This study revealed that mainstream teachers were lacking the necessary skills and knowledge for dealing with pupils with ADHD because these pupils exhibited impairments in many aspects, needing concrete and consistent experiences and much adult supervision. Hence to implement inclusive education for ADHD, teachers' competencies need to be improved. Pedagogical aspects that lead to ADHD related requirements in daily classroom activities could be met by improving initial and in-service training.

Even though the MOE has allocated SEN exposure in initial training, it is far from what is needed by mainstream teachers in order to take IE as part of their role. More emphasis is needed in initial training so every new teacher is knowledgeable enough to deal with SEN cases and is more dedicated towards SEN, in particular to ADHD (because unrecognised ADHD is more likely to be found in mainstream classes). Besides, SEN subjects should also be available as an elective course component to every basic course. In-service training and in-house training are ideal to overcome short-term needs. As both trainings are common in current practices, the emphasis on SEN should be increased by broadening the scope and also to include mainstream teachers (not only for those who wanted to be special teachers). However each requires a specific programme based on attitude and skill development in addition to providing the necessary knowledge about conditions such as ADHD. The issue is the quality of the training. Consequently the MOE should train more quality trainers and plan more quality programmes to ensure training is carried out effectively. Incorporating the above-mentioned training with good monitoring systems to the existing programmes could also increase the fluidity of IE implementation (to start from what already exist is easier and faster). The assistant teachers should also be

qualified/trained personnel so they can deal with pupils by applying proper educational techniques.

- Moreover, action research should be prioritised as teachers may produce valuable materials based on their educational experience. This type of research is currently promoted by the MOE for primary and secondary school teachers (Mohamad Nor, 2002). Preschool and special needs children should be included in the agenda. By promoting action research in preschools, experienced teachers could also share their expertise and experience in effective ways in teaching exceptional pupils. The combination of many components of effective practice will enrich the professional and research literature.

The finishing of the report of this study has been done during the period when the MOE Malaysia has yet to decide on the definition of and the provision for children with ADHD. These children should be attended to and provided with appropriate intervention. The appropriate programmes will only materialise when all-important aspects are equally considered and put on the right path. Aspects brought out by the teachers in this study should be given a proper attention.

Chapter 10

LIMITATIONS AND FUTURE STUDIES

This study represents the first attempt to explore ADHD empirically in Malaysian preschool children and it was carried out from an educational perspective. The exploration was designed based on the existing body of literature. The design was led by three goals namely to generate preliminary information and screening for ADHD cases based on empirical data; to study the behavioural characteristics of pupils with ADHD in natural settings; and to relate these characteristics with the components in the settings based on teachers profiles, and environments of the classrooms/schools. This chapter will consider the limitations of the study and make suggestions for future studies.

10.1 THE LIMITATIONS

There are a number of limitations to this study. The important limitations concern research design. In terms of criteria for diagnosis, it was not fully applied. This study used only one of five DSM-IV criteria for ADHD: ADHD symptoms to screen for ADHD cases. The 'true' incidence of ADHD in the population where the sample was drawn may be questioned. If the other criteria such as evidence from more than one setting had been applied, the symptoms identified in one setting (school), could be compared to other settings.

The second limitation concerns the research questions being studied where the specific issues were preschool pupils with ADHD in the mainstream classrooms. ADHD is a broad subject and only a few specific issues related to the pupils in mainstream classes at preschool level were explored. The concerns were on some aspects of ADHD including pupils' personal experience of having the ADHD symptoms that had been positively rated by their teachers. Some amount of self-knowledge has been gathered by unstructured conversation-like interviews. However to interpret what was said by a 5 or 6 years old child through casual conversation or pretend play is not easy. The interviews were

insufficiently structured. This, in conjunction with the children's tendency to deviate from the intended topics, led to the interviews lacking focus. Also, to draw conclusions based on what was revealed by those children is problematic because different children were interested to tell different things (Cooper, 1993). There are other equally important issues about ADHD including early identification, intervention, treatments and parental involvement in educating young pupils with ADHD. Hence these major limitations have potential impact on the interpretation of the results.

More boys were chosen for case studies. This was due to the relatively small number of girls in the group of higher score in ADHDC ratings. As mentioned in chapter 6 (see 6.2.5), the girls with ADHD who were initially selected for observation were replaced by boys with ADHD in the same class due to irregular attendance record. Hence, less evidence on girls in the present study means that no reliable gender comparison can be drawn from the qualitative evidence. If a larger sample were used there would be more chance to have girls included in the observation.

These findings were based on selected groups of the general school population. Those with comorbid conditions were not screened; hence some of the sample may have had such conditions. If comorbidity cases had been screened and excluded, the results of the qualitative data may have been different. A clinical sample may also have produced different findings.

No assessment of IQ or achievement of the pupils with ADHD in the case studies was made. One may argue that some cases may overlap with children with learning disabilities or cognitive disabilities.

There was an overrepresentation of female teachers as no male teacher was included. Male teachers may produce different results. Hence, generalizability of the findings on teachers' variable to other teacher samples is limited by gender. The limited size of the teacher sample also limits generalizibility of the results.

Despite the limitations, the results of the present study suggest that the Malaysian preschool children with ADHD clearly have functional problems in the preschool and add to the existing literature by highlighting the nature of Malaysian pupils with ADHD and the mismatch between their needs and the educational provision of inclusive education (IE) implementation in particular regular Malaysian schools. Teachers' profiles may have significant effects on the learning progress of pupils with ADHD.

10.2 FUTURE STUDIES

The present study put an initial step to educational research on ADHD done in Malaysia. It is restricted to preschool children with ADHD in inclusive settings. Therefore it is only a little aspect of the complex subject of ADHD in Malaysia. However, it can serve as a platform for future work in this area. More studies are needed to reveal the development of the ADHD population in Malaysia. The following studies are suggested for future research:

1. ADHD/IA is the less known subtype being under researched internationally. Children with this subtype are at risk of being neglected by teachers. They are also more likely to display learning problems or learning disabilities. Research evidence on the conditions of this type of pupils may lead to knowledge on protective factors which consequently may guide appropriate intervention.

2. Studies of effective assessment for ADHD. Assessment is a controversial issue in ADHD. Correct assessment could lead to correct treatments. More studies are needed to explore cultural factors surrounding assessment. Children with severe symptoms may need medical assessment and this should be incorporated by multidisciplinary teams so both medical and educational assessments could be synchronised for the purposes of intervention. Difficulties between two disciplines could be minimised.

3. Studies of early intervention for preschool pupils with ADHD. ADHD symptoms in many cases are more likely to occur in early childhood. Young children with possible ADHD should receive proper interventions to avoid the development of secondary symptoms.

4. Studies of parenting in association to ADHD cases. Parents and family members create important environments for children. Positive parental involvements could contribute to rapid improvement of ADHD symptoms.

5. Studies of clinically based samples from medical or biological perspective are required to broaden the literature of ADHD in Malaysia. The findings may contribute to comparison of the nature of ADHD in Eastern population.

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A split is made between Malaysian and international references because of differences in naming style. Amongst Malaysian (except for Chinese community) the surname is the forename of the father rather than the one carried down through generations, as is common in the western or other communities.

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Appendix 1

ADHDC Checklist

Date (today): _____

Student's Name:_____ Sex:_____ Date of Birth:_____

Teacher's Name:_____

Circle the number that best describe this student's behaviour over the past 6 months (or since the beginning of the school year)

1 = never or not observed

2 = seldom, about once or twice a month

3 = sometimes, about once or twice a week

4 = often, about once or twice a daily

5 = always, continuously throughout the day

Item	Statement of the item					
1.	Gives close attention to details	1	2	3	4	5
2.	Has difficulty sustaining attention in tasks or play activities	1	2	3	4	5
3.	Seems to listen carefully when spoken to directly	1	2	3	4	5
4.	Follows through on instructions and finishes work in time	1	2	3	4	5
5.	Has difficulty in organizing tasks and activities	1	2	3	4	5
6.	Likes to be engaged in tasks (e.g. schoolwork, homework) that require sustained mental effort	1	2	3	4	5
7.	Loses things necessary for tasks or activities	1	2	3	4	5
8.	Is easily distracted/inattentive	1	2	3	4	5
9.	Is forgetful in daily activities/things he/she has already learned	1	2	3	4	5
10.	Fidgets with hands or feet or squirms in seat	1	2	3	4	5
11.	Stays in seat in classroom or in other situations in which remaining seated is expected	1	2	3	4	5
12.	Runs about or climbs excessively (in situations in which it is inappropriate)	1	2	3	4	5
13.	Has difficulty playing or engaging in leisure activities quietly	1	2	3	4	5
14.	Is "on the go" or act as if "driven by a motor"	1	2	3	4	5
15.	Talks excessively	1	2	3	4	5
16.	Blurts out answers before questions have been completed	1	2	3	4	5
17.	Has difficulty awaiting turn in groups	1	2	3	4	5
18.	Interrupts or intrudes on others	1	2	3	4	5
19.	Shifts from one uncompleted activity to another and fails to finish work he/she starts	1	2	3	4	5
20.	Is careful in avoiding mistake in schoolwork	1	2	3	4	5
21.	Long attention span	1	2	3	4	5
22.	Only pays attention to things he/she is really interested in	1	2	3	4	5
23.	Temper outburst: explosive, unpredictable behaviour	1	2	3	4	5
24.	Obedient	1	2	3	4	5
25.	Disturbs other children	1	2	3	4	5

Appendix 1(b): ADHDC in Malay version

Senarai Semak ADHD

Tarikh hari ini_____

Nama murid:_____ Jantina: L / P Tarikh lahir: _____
Kelas: _____
Dilengkapkan oleh (nama guru): _____

Bulatkan nombor dalam skala pemeringkatan di ruangan sebelah kanan (untuk setiap item nombor 1 hingga 25) bagi menerangkan perlakuan murid berdasarkan pemerhatian dalam tempoh 6 bulan atau sejak awal tahun persekolahan. Skala pemeringkatan adalah seperti berikut:

1 = tidak pernah atau tidak dalam pemerhatian
2 = jarang, sekali atau 2 kali sebulan
3 = kadang-kadang atau sekali atau 2 kali seminggu
4 = kerap, sekali atau 2 kali sehari
5 = sentiasa, berterusan sepanjang hari

Item						
1.	Memberi sepenuh perhatian kepada perkara yang memerlukan penelitian	1	2	3	4	5
2.	Sukar untuk mengekalkan tumpuan dalam sesuatu kerja atau aktiviti permainan	1	2	3	4	5
3.	Mendengar dengan teliti ketika berbual atau berkomunikasi	1	2	3	4	5
4.	Mengikuti arahan yang berperingkat (lebih dari satu arahan dalam satu masa) secara menyeluruh dan menyiapkan tugasan dalam masa yang ditetapkan	1	2	3	4	5
5.	Merancang/mengatur/mengendalikan kerja atau tugasan dan aktiviti yang dijalankan	1	2	3	4	5
6.	Suka menerima tugasan (contoh latihan di kelas, kerja rumah) yang memerlukan tumpuan mental yang berterusan	1	2	3	4	5
7.	Sering kehilangan barang atau benda yang diperlukan dalam tugasan atau permainan	1	2	3	4	5
8.	Mudah terganggu atau tidak memberi tumpuan	1	2	3	4	5
9.	Pelupa (aktiviti atau perkara yang dipelajari)	1	2	3	4	5
10.	Menggerakkan tangan atau kaki tanpa sebab (fidgets) atau namapak gelisah di tempat duduk	1	2	3	4	5
11.	Duduk diam ditempat duduk dalam kelas atau dalam keadaan lain yang mana sepatutnya murid duduk diam	1	2	3	4	5
12.	Berlari atau memanjat secara keterlaluan dalam situasi yang tidak sesuai	1	2	3	4	5
13.	Sukar bermain atau membuat aktiviti waktu lapang secara senyap	1	2	3	4	5
14.	Sentiasa terdorong untuk bergerak kesana kemari atau seolah-olah bertindak di bawah kawalan motor	1	2	3	4	5
15.	Bercakap banyak (keterlaluan)	1	2	3	4	5
16.	Menjawap soalan dengan mendadak tanpa menunggu soalan selesai	1	2	3	4	5
17.	Tidak sabar menunggu giliran dalam aktiviti kumpulan	1	2	3	4	5
18.	Menggangu atau menyampuk orang lain	1	2	3	4	5
19.	Berpindah dari satu aktiviti kepada aktiviti lain (atau membuat kerja separuh jalan)	1	2	3	4	5
20.	Berhati-hati dalam menyiapkan kerja sekolah (tidak cuai)	1	2	3	4	5
21.	Memberi tumpuan kepada sesuatu perkara dalam jangka masa yang lama	1	2	3	4	5
22.	Memberi tumpuan kepada sesuatu perkara yang sangat diminati sahaja	1	2	3	4	5
23.	Panas baran, cepat melenting, atau tingkahlaku di luar jangkaan	1	2	3	4	5
24.	Patuh	1	2	3	4	5
25.	Mengganggu murid lain	1	2	3	4	5

Structured observation coding sheet

Child's Name/comparison's name: _____ Date: _____ Time:_____ Academic/least academic:

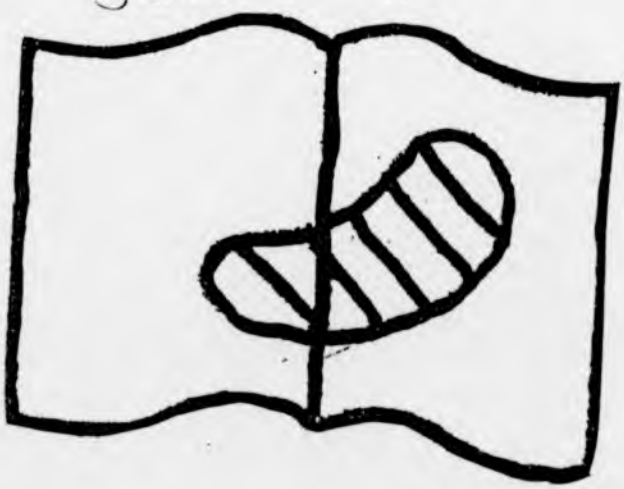
Interval /Behaviour	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b	7a	7b	8a	8b	9a	9b	10a	10b	11a	11b	12a	12b	13a	13b	14a	14b	15a	15b
Day Dream																														
Look around																														
Out of seat																														
Intrudes others																														
Arguments																														
Fidgeting																														
Excessive activity																														
Excited																														
Butting in																														
Play with objects																														
Grabbing material																														
Play alone																														

Interval /Behaviour	16a	16b	17a	17b	18a	18b	19a	19b	20a	20b	21a	21b	22a	22b	23a	23b	24a	24b	25a	25b	26a	26b	27a	27b	28a	28b	29a	29b	30a	30b
Day Dream																														
Look around																														
Out of seat																														
Intrudes others																														
Arguments																														
Fidgeting																														
Excessive activity																														
Excited																														
Butting in																														
Play with objects																														
Grabbing material																														
Play alone																														

Appendix 2: Observation coding sheet.

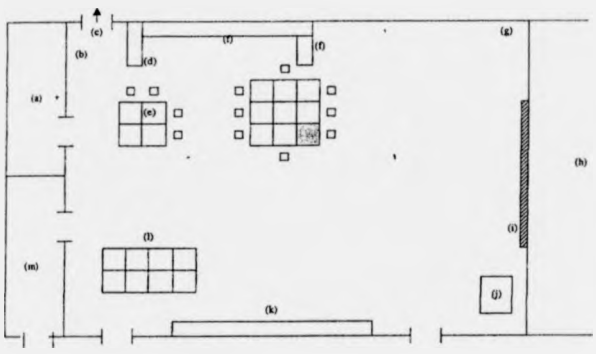
Appx 3.

Very small print



Appendix 3: Classroom arrangements in case studies

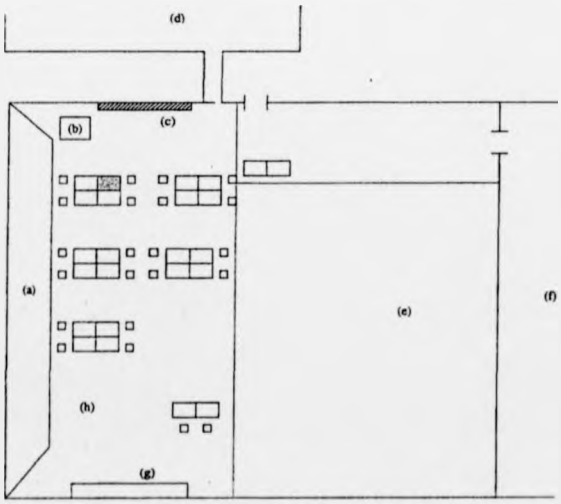
Classroom setting for SU1



Index

(a) = Toilet / washroom
(b) = Reading corner
(c) = School flags
(d) = Cupboard
(e) = Individual working area
(f) = Book shelves
(g) = Audio-visual corner
(h) = Vacant class
(i) = Black board
(j) = Teacher's table
(k) = Cabinet
(l) = Meal-time corner
(m) = Kitchen

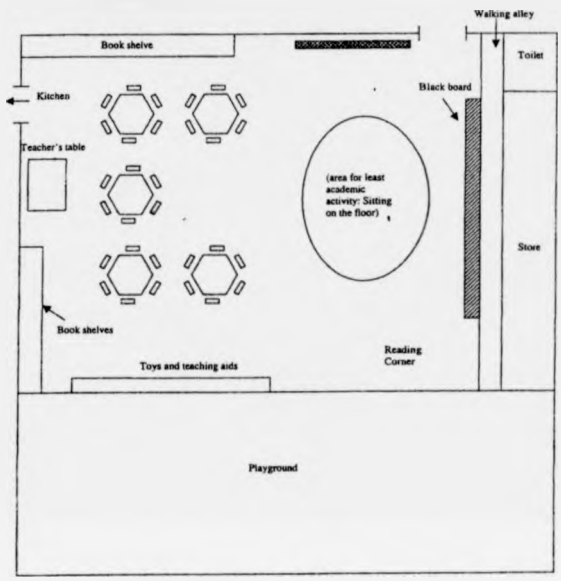
Classroom setting for SU2



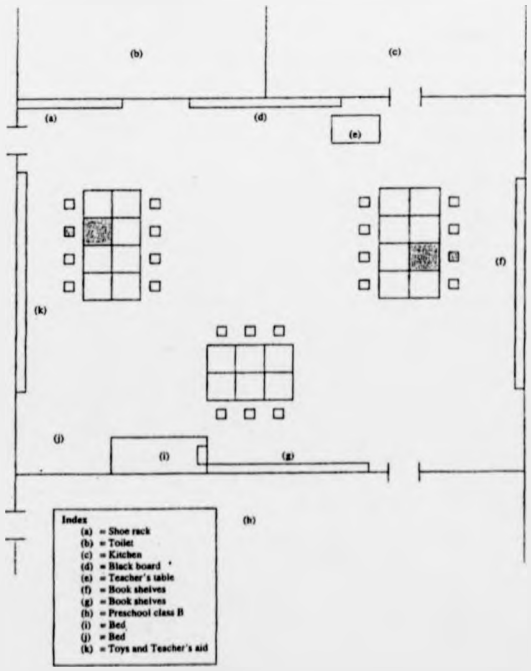
Index

(a) = Stage
(b) = Teacher's table
(c) = Black board
(d) = Music room
(e) = Preschool class B
(f) = Class room (year 3)
(g) = Book shelves
(h) = Preschool class A

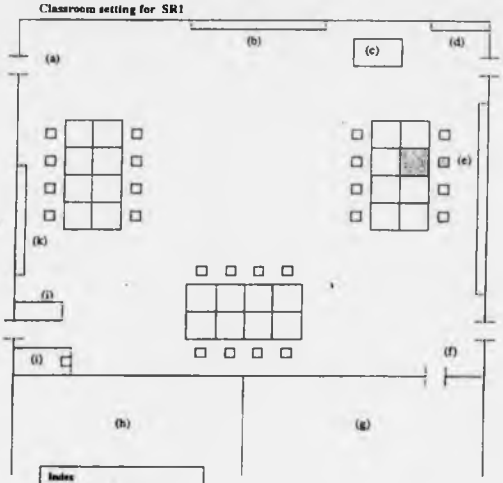
Classroom setting for SU3



Classroom setting for SU4

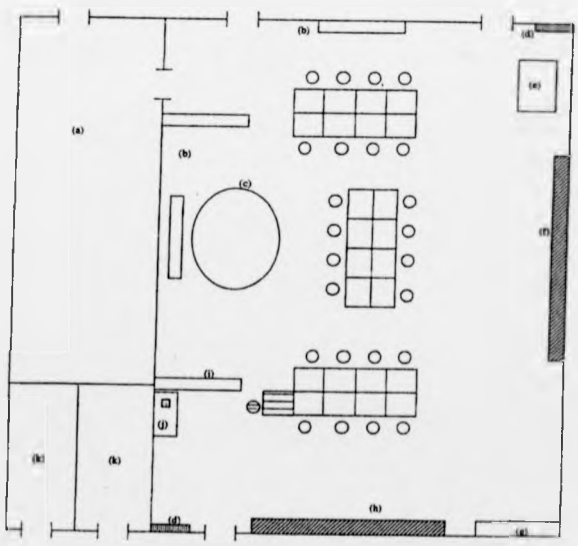


Classroom setting for SR1



Index
(a) = Audio-visual corner
(b) = Black board
(c) = Teacher's table
(d) = Shoe rack
(e) = Book shelves
(f) = Individual corner
(g) = Kitchen
(h) = Toilet
(i) = Bed
(j) = Cupboard
(k) = Book shelves

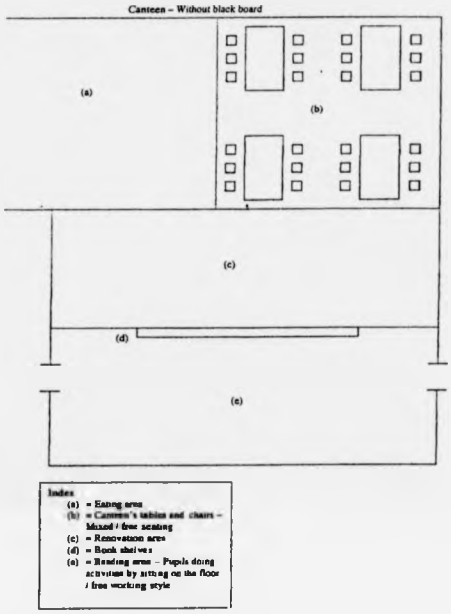
Classroom setting for SR2



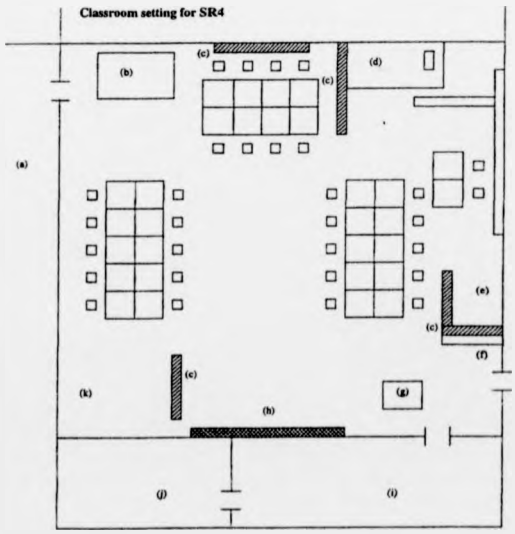
Index
(a) = Preschool kitchen
(f) = Book shelves
(g) = Learning corner
(h) = Shoe rack
(i) = Teacher's table
(j) = Poster board

(g) = Audio system
(a) = Display board
(b) = Toy shelves
(c) = Bed
(d) = Toilet

The space range used as temporary preschool classroom for SR3



Index
(a) = Eating area
(b) = Canteen's tables and chairs – Mixed / free seating
(c) = Renovation area
(d) = Book shelves
(e) = Reading area – Pupils doing activities by sitting on the floor / free working style



Index
(a) = Playground
(b) = Ecological equilibrium
(c) = Book shelves
(d) = Bed
(e) = Individual working area
(f) = Shoe rack
(g) = Teacher's table
(h) = Blackboard
(i) = Kitchen
(j) = Toilet
(k) = Reading corner

Appendix 4

The schools' background (location for case studies in general)

School	Significant features
SU1	SU1 is a national school established in 1960's to provide education for children in the area. Located in the suburb of the northern side of the KL city. About one kilometre away from main road by a close access road. Along the access road are the upper class and middle class settlements. The other end of the school surrounding is the settlement for the working class families. The population of the area are from mixed ethnicity and social class. However the vast majority of the pupils in this school were from working class families. The pupils live within a four kilometres radius of the schools. In early 1990s the school was upgraded to A grade, because the pupil enrolment was high enough to be in the category and provided with appropriate facilities. However the enrolment dropped gradually and in year 2001 the pupils' enrolment was only 379 with 22 teachers, almost half the number of the school's capacity. According to the head teacher of the school, the situation was due to the low population intensity in the area and the trend of the Malaysian middle and upper class family choosing school with good reputations or control school for their children's education. Most of the pupils were from Malay ethnicity. All the teachers and pupils in this school wear nametag
SU2	SU2 is situated at one side of a busy road in the heart of KL city, highly populated, the school location was surrounded by many neighbourhood facilities such as hospital, stadium and national library. The residents of the area are majority Malay as mainly the Malays inherited the houses or land and rebuilt the property into residential units for profit and the area became the Malays' largest settlement area in the city. The pupils' enrolment is high and gradually increases every year. Most of the pupils we from the Malay settlement and the government quarters. The vast majority was Malay children.
SU3	This school is located on the ground floor of four of the seven residential blocks of city council 16-storey flats. Other agencies occupied the ground floor of the other three blocks. They were a private nursery, two private preschool programmes, city council offices, and praying centre for Muslim community and shop outlets. This residential

School	Significant features
	area is one of satellite area in KL with a high population of working class families from mixed ethnicity. There are some five-storey flats and linked houses as well as squatters' settlements in this area. To accommodate the education for young children in the area, SU3 is one of the two primary schools set up by the MOE in the same immediate location. Pupils in preschool class, year one, year three and year six studied in morning sessions whereas year two, year four and year five studied during the afternoon session. The double school session was the solution for the shortage of classrooms in the school. Morning session starts at 7.25 a.m. and ends at 1.00 pm whereby the afternoon session starts at 1.00 pm to 6.20 pm. As is the nature of residential blocks, the school compound and facilities such as playgro and toilets were shared with the public. The school canteen was situated at a separated purpose built single storey block. It was at the end of this housing compound, (nearby a garbage collection area). As consequences, the students were exposed to an undesirable outlook and influence and no doubt this risked the pupils' learning advantages. Hence t school holds a less positive reputation in terms of academic achievement and facilities.
SU4	SU4 is located at the same neighborhood as SU3 and the distance between SU3 and SU4 is only 500 metres. However, it was different in terms of school facilities compare to SU3 as this school has it own buildings with equitable school compound and other resources. The school's enrolment was very high compared to SU3 as shown in Table 6.2. The students were mostly from the one-kilometre radius area. In term of academic achievement, this school was in the average with a small percentage of high scorers in public examination of year six. To cater for the demand the school was set up in two sessions under the same administration. Morning session starts at 7.25 a.m. and ends at 1.00 p.m. whereby the afternoon session starts at 1.00 p.m to 6.20 p.m. The vast majority of the students were Malay and a small number were Indian, whereby most of the children from the Chinese ethnicity were schooling in the National Type (Chinese) primary school two kilometres from SU4.
SR1	The school is located at northern part of Kedah, near the border of Malaysia and Thailand. It is about 40 kilometres from Alor Setar (county capital). The area was a remote rural area until middle of 1990s. People in the area speak Malay language with

School	Significant features
	a discrete accent. There is a very limited public transport service to link the people to outside neighbourhood. There were 209 pupils and 16 teachers in the school all of them were Malay. The pupils were from low SES family who resided in the nearby villages. Most of their parents were working as rubber taper or doing odd jobs work (known and registered as a "farmer" in the pupils' school record which means no basic regular earnings) in the villages. Only a few of the parents work in factory area, miles away. The situations gave advantages to the school in terms of parents support during school activities or events as the parents generally have plenty of free time to get involved with their children's activities upon teacher's requirements. Consequently, most teachers have a very good rapport with the parents and they were familiar with each other. In terms of academic reputation, the school was among the privileged in the county leagu table as the results for year six examinations were good in most subjects except for Engl
SR2	SR2 is located in a small town in southern part of Kedah, about 120 kilometres away from Alor Setar. Mixed ethnicity with majority Malay and Indian and a small number of Chinese populated the area. Malay and Indian reside on the outskirts of the town and most of the Chinese live in the town working in their business lineage. There was also a new industrial satellite area 20 kilometres from SR2. In terms of location, the SR2 was situated at the strategic place, as it was accessible by many public services as it was at the main road access to other parts of the district. There were 808 pupils and 43 teachers in the school. Most pupils were from 5 kilometres radius of the school and a number of them were from the mentioned industrial area, travelled with their parents to school everyday as the parents were working in the nearby area. The other reason for the parents to choose the school was the academic reputation and school facilities. SR2 was one of the good schools in the district. With the well-developed infrastructures and other facilities , the school was able to cater all the pupils in one school session.
SR3	SR3 is located at the palm oil estate, close to the access road to agricultural estate area (rubber , palm oil, and poultry farm). The school is about three kilometres from main road.

School	Significant features
	Vast majority of the people in the area are Malays, local people who work in the estate and reside in the small remote villages. There is also a village resided by Malaysian of Siamese ethnicity. As the area is remote, the surrounding was very quiet most of the time. Most people cycled (bicycle or motorcycle) to work or to take their children to school. There were basic infrastructure and facilities in the school with one small modern building and three wooden buildings. Timber blocks (old block and teacher's quarters built in early 60s) used as classrooms were scattered in the school compound. The school was in the group of lower achievement ranking in terms of academic and co-curriculum activities. As a small school, the teachers knew most of the pupils and their parents and some of the parents were the former students of the school.
	SR4 is located at west coastline of Kedah, about 95 kilometres from Alor Setar. There was a jetty in the settlement (cum a bazaar) for fishermen and recreational boats as visitors from nearby beach usually called for preserved seafood and variety of dried fishes which were the only stuff that attracted people to visit the place. There were 507 pupils and 25 teachers in the school. The pupils were from five kilometres radius. In terms of academic achievement, the school was moderate in most subjects and low achievement in English language. At the fieldwork time the school was waiting for a new head teacher and two senior assistant teachers administratively managed the school.

Appendix 5

The physical environment and class population

School	Significant features
SU1	*Preschool infrastructure:* Classroom was located at the end of a single storey building, close to the end of school compound and it is far from the main area such as school canteen or administrative building. No specific playground facilities was available but there was a fence-isolated sand play and water play area next to the preschool classroom. Only eight pupils enrolled for year 2001, three girls and five boys all born in 1995. Among them was only one Indian boy and the rest were from Malay ethnicity. As the enrolment number was far below the class capacity (25 pupils) the teacher had advantages by setting a specific area for mealtime as well as a working area for different type of activities. *School attire:* Red T shirt printed with the school name at the back and navy blue shorts, white shoes.
SU2	*Preschool infrastructure and pupils:* School hall was used as temporary classroom for preschool pupils, due to the urgency of upgrading the preschool classrooms caused by the frequent flash floods in the area. The hall was divided into two classrooms by just desks arrangement, which facilitates two groups of pupils one at each end of the room. The pupil with ADHD being studied was in class A, located at the end of the hall close to the hall theatre. There were 20 pupils in the class, ten girls and ten boys, all born in 1995. Among the 20, only one was Indian (boy) and the rest were Malay. The class teacher identified a group of four pupils as needing special attention and they were seated next to her table. The child with the highest score in teacher's ADHDC rating was chosen for case study. *School attire:* Red T-shirt printed with the school name at the back and navy blue shorts, white shoes and socks.
SU3	*Preschool infrastructure:* Preschool class was located at the end of the last block about ten metres away from main road. There were thirteen pupils in the class, three girls and ten boys, all Malays, were born in 1995. The enrolment was comparatively low as the same programme in the nearby school (SU4) had almost tripled the number of enrolment. Class setting was different from typical MOE classroom as it was provisionally

School	Significant features
	using a renovated housing unit of residential block, the class was relatively small in size compared to other MOE preschool programmes. The stipulation of the class was adjusted in many respects in order to minimise constraints. The desks were arranged in five hexagonal shapes and occasionally the pupils were seated according to the type of activities. The case being studied was an alternative case chosen because the pupil with the highest score on the ADHDC never turned up in the class. *School attire:* Blue T-shirt printed with the school name at the back and navy blue shorts, white shoes.
SU4	*Preschool infrastructure and pupils:* There are two classes in the programme. The classes are situated in single storey buildings built for preschool programme. The building is at the corner of school compound and close to the school canteen. During recess time, the preschool surroundings quite noisy as the older pupils hung around the preschool classes. Out of 58 preschool pupils, there was only one Chinese boy and the rest were Malays. There were three pupils with ADHD listed for observation so the researcher decided to do two cases in the class (one boy and one girl) and one as tentative case. As the girl did not regularly turn up in school, both boys were chosen for case studies. *School attire:* Red T-shirt printed with the school name at the back and navy blue shorts, white shoes and socks.
SR1	*Preschool infrastructure:* The preschool class in SR1 was situated at the left end of the ground floor of the double storey building. The class was right away in front of the school gate in which was located the large tarmac area used for morning assembly and teachers' parking area. The preschool enrolment for 2001 was 27 Malay pupils, twelve girls and 15 boys. All of these pupils were born in 1995. At the time of the observations seven of them were not able to recognize alphabetical letters but most could recognize as well as write their own name. *School attire:* Two types of uniforms; the common one was red T shirts printed with school's name and the other one was specifically for the day that the teacher planned for activities related to religious or cultural circumstances.
SR2	*Preschool infrastructure:* The preschool classroom was located at the end of the second last block. The playground and other preschool facilities were fenced to

School	Significant features
	keep them away from the older pupils. There was a small garden to facilitate the pre-science lesson for preschool pupils. These pupils have specific shoes provided for outdoor activities. There were 25 Malay pupils in preschool programme in SR2, thirteen girls and twelve boys, all born in 1995. Five of them were the children of the school's staff. The class setting closely followed the exemplar pattern proposed in the MOE preschool guidebooks. There were corners for reading, science, and individual learning. There were many teaching aids and modern materials in the class. However the teacher manipulated all materials provided by the Curriculum Development Centre (CDC) of MOE in 1982. When the MOE preschool programmes were first introduced, teaching materials such as Pictorial materials and Blocks were provided to the schools. The combination of the old and new material made a sufficient set of toys and teaching aids available in this programme and passed on a different climate in the class situation compared to other preschool programmes. Teaching and learning were done by different approaches according to the objective and the intended outcomes. Most of the activities were focused on pupils' involvement. *Station play*, group activities and outdoor activities were among the favourite routine employed by the teacher. In terms of formality, the setting in this programme was relatively informal as the class has no blackboard, and the teacher used alternative strategies for pencil and paper activities. *School attire:* Blue T shirt printed with the district education office at the back and navy blue shorts, white shoes and socks
SR3	*Preschool infrastructure:* As a small school, SR3 has very limited classrooms. Part of the school canteen was used as preschool temporary class as the preschool kitchen undergoing renovations work and all the kitchen facilities were allocated in the preschool classroom. However the reading corner in the class was useable and it was utilised for a group working area during small groups activities. Despite the fact that the pupils working in the canteen were facing more diversion, the teacher managed the class activity and the class routine with minimum distraction by dividing the pupils into two groups and then rotating the group works and the working area between canteen and classroom. In terms of content, the lessons were quite formal as the groups were doing either pre-number or Malay language and their work based on the chosen workbooks. The group in the class was supervised

School	Significant features
	by the assistant teacher whereas the group in the canteen was taken by the teacher. The reason for weighty focus on mathematics and Malay language was due to the need for the pupils to acquire the basic skills in reading and counting as preparation for formal primary year one due in January 2001. As learning in the canteen was not easy, some pupils were using the pondok (a small house built in the playground for free play activities, located between the preschool class and the canteen) as their working area. As a consequence the teacher flexibly divided the pupils into three groups at a time, and the third group doing their work in the pondok without supervision. *School attire:* Green T shirt printed with school name at the back and navy blue shorts, white shoes and socks.
SR4	*Preschool infrastructure:* In SR4, the preschool programme was located at the end of third block, close to the canteen and the school field. The preschool class corridor was busy most of the time, particularly during the school recess time as the older pupils walked to and from the school canteen. The playground was attached to the back door of the classroom and it was isolated from other pupils by a fence. There were 27 pupils in the class 14 boys and 13 girls. Two of the boys were born in 1996. Out of 27, four pupils were the children of the school's staffs. The other 23 were the children from the surrounding villages. The class was set-up in three groups and the tables in each group were arranged in rectangular shape and the three groups made up a U shape as in SU4 and SR1. There were reading corner, individual learning area and a small ecological model built aquarium at the end of the class. A bed was set up at the back of the class, in between the bookshelves and the individual learning area. During the observation week, the school was in atmosphere of preparing for "speech day", scheduled in the first week of November. Fourteen of the preschool pupils were taking part in traditional dance and they were withdrawn from the lesson for practices and rehearsal from 9.30 a.m. to 11.00 a.m. The activities for the preschool pupils who were not involved in the show were arranged to be less academic in order to make them feel contented. *School attire:* Red T shirt printed with the school name and navy blue shorts, white shoes and socks.

Appendix 6

a. Interview schedule for preschool teachers

Protocol:
Introduction to interview purposes
Asking permission to tape (record) and ensuring the confidentiality
Conclusion by thanking the teachers and reassuring confidentiality

Key questions for: Mode one part one.

1. Based on your experience, can you please tell me about this pupil (selected pupil with ADHD)
2. What is your perception on his/her classroom behaviour
3. Do you think s/he has ADHD?
4. What problems do you face in teaching this pupil
5. By what methods do you think s/he learn best?

Probing questions to follow each key questions such as How did you know? How do you get the information? What factors do you think influence the behaviour?
Ending the interview by: Are there any other points you want to raise that you think relevant to this child?

Key questions: Mode two

1. What do you know about special education in Malaysia?
2. What do you understand about children with special educational needs
3. What type of SEN you have experience in previous year/years
4. What is your understanding of the term 'ADHD'?
5. Can you tell about the term 'inclusive education (IE)'?
6. What is your perception on this situation (vignette IE)? + probing questions.

Note: vignette was used because teachers' responses on questions 5 indicate that they were not properly understand the term IE.

Vignette (IE situation)

Survey shows that there are 5 pupils with Special needs in this area. These pupils are:
i) a girl with mild Down syndrome (6 years old)
ii) a boy with visual impairment (7 years old)
iii) a boy with ADHD (9 years old)
iv) a girl with physical disability (11 years old)
v) a boy with moderate cognitive impairment (10 years old)

Their parents requested places in this school so that they can stay at home rather than in a special school. The MOE supported the request provided the mainstream teachers are willing to accept them in mainstream classroom.

Probing questions for 1 to 6 above varied in every depending upon the answer they gave (e.g. for question 6: What skills do you think teachers should have in teaching those children?)

Ending the interview by: Are there any other points you want to raise that you think I haven't asked but are relevant to your situation?

Appendix 6

b. Interview schedules with pupils

Mode 1: semi-structured (standardised in every case)

1. Kalau saya bagi kamu 4 gula-gula untuk kongsi dengan kawan dalam kelas ini, siapa nama kawan yang kamu nak kongsi? (If I give you 4 sweets to share with your friends in this class, name the friends you want to share with).
2. Saya ada beberapa set mainan/alat permainan. Kalau saya bagi kamu pilihan untuk pilih kawan sebagai pasangan bermain alat mainan ini, siapa yang kamu pilih? (I have a few sets of games/toys with me. If I give you a choice to choose your friends as a partner to play with, who may you chose?)

Interview guide for Mode 2 (unstructured: not standardised for every case): Concerning 5 aspects

1. Background/family (all the information collected is counter-checked with teachers' record): Guna carta gambar keluarga dalam buku kerja. Mari kita cerita tentang diri dan keluarga. Boleh beritahu saya berapa abang, kakak atau adik kamu? Ibu dan ayah keja apa? Ada lagi kamu nak cerita tentang keluarga. (Let's talk about family. Can you tell me how many brothers and sisters you have?)
2. Hobby: (Gambar kanak-kanak main guli) Mari kita cakap pasal masa lain dari waktu sekolah. Apa yang kamu suka buat masa dirumah? (Let's talk about your time after school. what do you like to do after school?).
3. Ambition: (guna gambar dalam buku kerja) Bila kamu dah besar apa kamu kerja kamu nak pilih? Kenapa nak jadi e.g doktor: ikut jawapan murid (When you grow up, what do you want to be? Why do you want to be ....(e.g a doctor : according to pupils' answer)
4. Schooling: Mari kita cerita tentang sekolah. Suka datang sekolah? Apa yang kamu paling suka buat masa di sekolah? Boleh beritahu lagi pasal sekolah. Apa yang kamu tak suka buat di sekolah? (Let's talk about school. Do you like to be in school? Can you tell more about it? How about the activity you like most? Any other thing that you do not like in school?)
5. Friends: berapa ramai kawan kamu ada disekolah? Siapa nama mereka? di rumah?. Cerita lagi tentang kawan kamu. (How many friends do you have in school? Who are they? Your friend at home? Tell me more about your friends (+ probing questions)
6. Based on classroom events:

a) Activity: (e.g. boleh cerita sikit tentang aktiviti/mainan ini + Soalan susulan Macam mana nak buat supaya activiti ni jadi lebih seronok. (Can you tell me about the activity + (probing questions, why? How to make the activity more interesting?)

b) Situation: (e.g. what do you feel about this work/argument/punishments)

Appendix 7

Consent Form

Title of Research: Malaysian Preschool Children with Potential Attention deficit Hyperactivity Disorder (ADHD) in Inclusive Education Settings

Name of researcher: Supiah Saad

To whom it may concern

I consent to participate in the research mentioned above and provide relevant data for use in the study.

The researcher, Supiah Saad has explained the nature and general purpose of the study. I hereby give my consent on the understanding that I may withdraw my participation or my pupils involvement at any time I so desire. I trust that my contributions will be represented accurately.

Name of participant_____ Date_____ Signature_____

Supiah Saad Date_____ Signature_____

Appendix 8 Standardised handout to preschool teachers

Maklumat Am Penyelidikan

Nama penyelidik : Supiah Saad
Alamat: Faculty of Education, University of Warwick, Coventry CV7 4AL United Kingdom
Bidang Penyelidikan: Pendidikan Khas (Special Education)
Tajuk Kajian: Malaysian Preschool Children with Potential ADHD in Inclusive Education Settings.
Penyelia: Prof Geoff Lindsay

Fokus Penyelidikan: Tujuan kajian ini adalah untuk mengkaji murid prasekolah yang mempunyai ciri-ciri ADHD. Program prasekolah di bawah kelolaan tuan/puan telah dipilih sebagai sumber responden kajian. Kajian in terdiri daripada dua peringkat.
Peringkat pertama adalah saringan untuk mengenalpasti murid yang mempunyai ciri ADHD melalui senarai semak ADHD. Satu set senarai semak diedarkan dan tuan/puan dimohon untuk membuat pemeringkatan skala tingkahlaku setiap murid dalam borang yang disediakan sebagaimana yang diterangkan dalam surat iringan. Maklumat daripada senarai semak ini akan digunakan untuk pemilihan responden dalam peringkat kedua kajian. Responden akan dipilih dikalangan murid tuan/puan (8 program sahaja akan terlibat).

Peringkat kedua adalah kajian kes individu, murid yang mempunyai ciri ADHD, bertujuan untuk memahami situasi berkaitan pembelajaran dan kemahiran sosial murid yang mempunyai ciri ADHD serta kekangan yang timbul hasil daripada perlakuan murid berkenaan.

Untuk memahami situasi tersebut saya perlu melihat secara lebih dekat dan terperinci perlakuan murid semasa belajar dan juga semasa berinteraksi dengan rakan sebaya. Saya juga akan melihat kekerapan perlakuan 'off task' dan perlakuan lain. Selain itu saya juga akan menemubual murid dan guru untuk mendapatkan maklumat tambahan berhubung situasi murid yang diperoleh berdasarkan pemerhatian.

Guru bebas memberi ulasan walaupun kritikal tentang apa yang saya lakukan dan perkatakan sepanjang masa kajian. Segala pandangan yang diberi dianggap sulit melainkan ianya diberi kebenaran untuk digunakan. Ingin ditegaskan bahawa nama sekolah, nama murid dan guru yang terlibat dalam kajian ini akan diberi nama samaran untuk mengelakan pengenalan identity sebenar.

Untuk memastikan apa yang dibual dicatat dengan tepat dan terperinci, saya akan menggunakan perakam suara, melainkan jika responden menyatakan tidak bersetuju untuk dirakam. Saya juga akan mengambil gambar situasi bilik darjah dan sebagainya dimana tuan/puan boleh memberikan kebenaran untuk penyiarannya.

Selepas selesai kerja lapangan ini saya akan membawa data mentah balik ke England untuk dianalisis. Penganalisisan data dan penulisan adalah berdasarkan kefahaman saya atas data dan maklumat yang ada beserta dengan kejujuran dan kemunasabahan melalui tafsiran pemikiran saya. Berdasarkan perkara sedemikian saya akan cuba sedaya upaya memberi rumusan tentang apa yang dianalisis untuk memahami murid prasekolah yang mempunyai ciri ADHD di sekolah biasa (inklusif).

Jangka masa keseluruhan kerja lapangan yang melibatkan pemerhatian dan temubual: 3 bulan.

Penglibatan sekolah:

1) Bergaul dengan guru dan murid prasekolah sepanjang waktu persekolahan selama 1 hingga 2 minggu bagi setiap murid yang dipilih untuk kajian kes.
2) Membuat pemerhatian berstruktur keatas murid yang dipilih.
3) Menemubual guru dan murid berkenaan mengikut keperluan.

Translation of the content

The aim of this research is to study Malaysian preschool pupils with ADHD behavioural characteristics in Malaysia. The preschool program under your administration is chosen as a source for participants. This study will be done in 2 stages.

The first stage is to screen pupils with ADHD symptoms, using a ADHD checklist (ADHDC). A set of ADHDC is distributed and your cooperation in completing the rating is needed. The data will be used as a basis for selecting the participants for second stage of study.

The second stage aims to investigate the learning and social skills of pupils with ADHD, and the constraints faced by their teachers in dealing with their behaviours.

To understand the situation, I need to observe these children during class/learning activities. I will observe the frequency of the off-task behaviours as well as other behaviours. I will also interview the pupils on their learning styles and their perceptions about their own behaviours. Interviews will also be carried out with teachers to gain additional information on these pupils. Teachers are free to voice their critical views even on the researchers behaviours and words used. All views will be handled confidentially and used only with consent. In this regard the name of the school, teachers and pupils involved in the study will be replaced by pseudonyms.

To ensure recording of correct information, I will use a tape recorder, except when it is not allowed by the interviewee. I need also some photographs of classroom situations, which I will put in my thesis only with permission.

Upon completing the fieldwork, I will take the data back to Coventry, England for analyses. The analyses and write-up will be based on my understanding of the data and information collected, incorporated with my authenticity and my logic interpretations. Based on these, I will give a summary regarding what was analysed so as to understand pupils with ADHD in Inclusive settings.

Fieldwork duration: qualitative data collection: 3 months

My involvement in schools: in the period of this fieldwork I need the permission to;

1) mixing with teacher and pupils during school hours for about 2 week in each class
2) observing 2 pupils for targeted behaviours, using time sampling
3) interviewing relevant teachers and pupils

All cooperation given is greatly appreciated.